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STOCK-MARKET "PATTERNS" AND FINANCIAL ANALYSIS: METHODOLOGICAL SUGGESTIONS

HARRY V. ROBERTS*
University of Chicago

INTRODUCTION

OF ALL ECONOMIC time series, the history of security prices, both individual and aggregate, has probably been most widely and intensively studied. While financial analysts agree that underlying economic facts and relationships are important, many also believe that the history of the market itself contains "patterns" that give clues to the future, if only these patterns can be properly understood. The Dow theory and its many offspring are evidence of this conviction. In extreme form such theories maintain that *only* the patterns of the past need be studied, since the effect of everything else is reflected "on the tape."

A common and convenient name for analysis of stock-market patterns is "technical analysis." Perhaps no one in the financial world completely ignores technical analysis—indeed, its terminology is ingrained in market reporting—and some rely intensively on it. Technical analysis includes many different approaches, most requiring a good deal of subjective judgment in application. In part these approaches are purely empirical; in part they are based on analogy with physical processes, such as tides and waves.

In light of this intense interest in patterns and of the publicity given to statistics in recent years, it seems curious that there has not been widespread recognition among financial analysts that the patterns of technical analysis may be little, if anything, more than a statistical artifact. At least, it is safe to say that the close resemblance between market behavior over relatively long time periods and that of simple chance devices has escaped general attention,

* I am indebted to Lawrence West and Arnold Moore for help in the preparation of this paper.

though the role of chance variation in very short time periods has often been recognized. One possible explanation is that the usual method of graphing stock prices gives a picture of successive *levels* rather than of *changes,* and levels can give an artificial appearance of "pattern" or "trend." A second is that chance behavior itself produces "patterns" that invite spurious interpretations.

More evidence for this assertion about stock-market behavior is still needed, but almost all the fragmentary evidence known to me is consistent with it. The major published evidence from recent years is a paper about British stock indexes (and American commodity prices) by the British statistician, M. G. Kendall, which appeared in 1953.[1] I have done similar, though less comprehensive, work with recent American data, for both indexes and individual companies, which has been entirely consistent with Kendall's findings. If, for example, weekly *changes* of the Dow Jones Index are examined statistically, it is apparent that these changes behave very much as if they had been generated by an extremely simple chance model. The history of market *levels* behaves very much as if levels had been generated by a *cumulation* of results given by the chance model.

These general conclusions have been reached, probably repeatedly, long before Kendall's study. Thus Holbrook Working, writing in 1934, said:

> It has several times been noted that time series commonly possess in many respects the characteristics of series of cumulated random numbers. The separate items in such time series are by no means random in character, but the changes between successive items tend to be largely random. This characteristic has been noted conspicuously in sensitive commodity prices. . . . King has concluded that stock prices resemble cumulations of purely random changes even more strongly than do commodity prices.[2]

Indeed, the main reason for this paper is to call to the attention of financial analysts empirical results that seem to have been ignored in the past, for whatever reason, and to point out some methodological implications of these results for the study of securities.

From the point of view of the scholar, much more research is needed to establish more precisely the limits to which these generalizations can be carried. For example, do they apply to changes for periods other than weekly? (In my own explorations they have

1. Maurice G. Kendall, "The Analysis of Economic Time Series. I," *Journal of the Royal Statistical Society* (Ser. A), CXVI (1953), 11–25.

2. Holbrook Working, "A Random-Difference Series for Use in the Analysis of Time Series," *Journal of the American Statistical Association,* XXIX (1934), 11.

worked fairly well for both longer and shorter periods.) How well do they apply to individual securities? (Most work has been done on indexes.) What slight departures from the chance model are detectable? Perhaps the traditional academic suspicion about the stock market as an object of scholarly research will be overcome, and this work will be done.[3] This paper, however, is concerned with the methodological problems of the financial analyst who cannot afford to ignore evidence that is easily obtainable from the most casual empirical analysis. From his point of view there should be great interest in the possibility that, to a first approximation, stock-market behavior may be statistically the simplest, by far, of all economic time series.

This paper will describe the chance model more precisely, discuss briefly the common-sense interpretation of the model, and outline a number of methodological suggestions for financial analysts.

The Chance Model

Kendall found that changes in security prices behaved nearly as if they had been generated by a suitably designed roulette wheel for which each outcome was statistically independent of past history and for which relative frequencies were reasonably stable through time. This means that, once a person accumulates enough evidence to make good estimates of the relative frequencies (probabilities) of different outcomes of the wheel, he would base his predictions only on these relative frequencies and pay no attention to the pattern of recent spins. Recent spins are relevant to prediction only insofar as they contribute to more precise estimates of relative frequencies. In a gambling expression, this roulette wheel "has no memory."

The chance model just described insists on independence but makes no commitment about the relative frequencies, or probabilities, of different outcomes except that these must be stable over time. A frequency distribution of past changes is a good basis for estimating these probabilities, so long as the independence assumption holds. For concreteness in demonstration, we shall assume that weekly changes of a particular index behave as if they were independent observations on a normal distribution, with mean +0.5 and standard deviation 5.0. The details of constructing such a roulette wheel need not concern us here. We shall, in fact, employ for our purpose a published table of random numbers that can be modified easily to

3. Holbrook Working has worked for many years on the behavior of commodities markets, and full publication of his findings is still forthcoming.

conform to the specifications stated above.[4] Assuming that the series starts at 450, we obtain a hypothetical year's experience graphed in Figures 1 and 2.

To even a casual observer of the stock market, Figure 2 is hauntingly realistic, even to the "head-and-shoulders" top. Probably all the classical patterns of technical analysis can be generated artificially by a suitable roulette wheel or random-number table. Figure 1 gives much less evidence of patterns, although intensive and imaginative scrutiny would undoubtedly suggest some. The only *persistent*

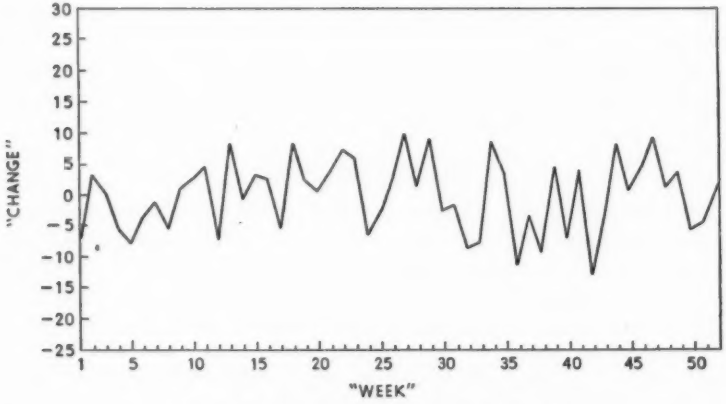

FIG. 1.—Simulated market changes for 52 weeks

patterns of Figure 1 (and its continuation beyond 52 weeks) are (1) the relative frequency of different outcomes and (2) the clustering tendency for similar outcomes. The clustering phenomenon runs contrary to intuitive feelings about chance and raises temporary hopes about predictability. These hopes, however, can be crushed by theoretical analysis that shows clustering to give no information beyond that contained in the relative frequencies.

Figures 3 and 4 give the corresponding diagrams for the Dow Jones Industrial Index for 1956. The general resemblance between Figures 3–4 and Figures 1–2 is unmistakable, although no pains were taken to devise a "roulette" wheel that would simulate closely the actual history of 1956. The major difference in detail between Figures 1 and 3 is that Figure 3 shows greater dispersion. We prob-

4. The RAND Corporation, *A Million Random Digits with 100,000 Normal Deviates* (Glencoe, Ill.: Free Press, 1955).

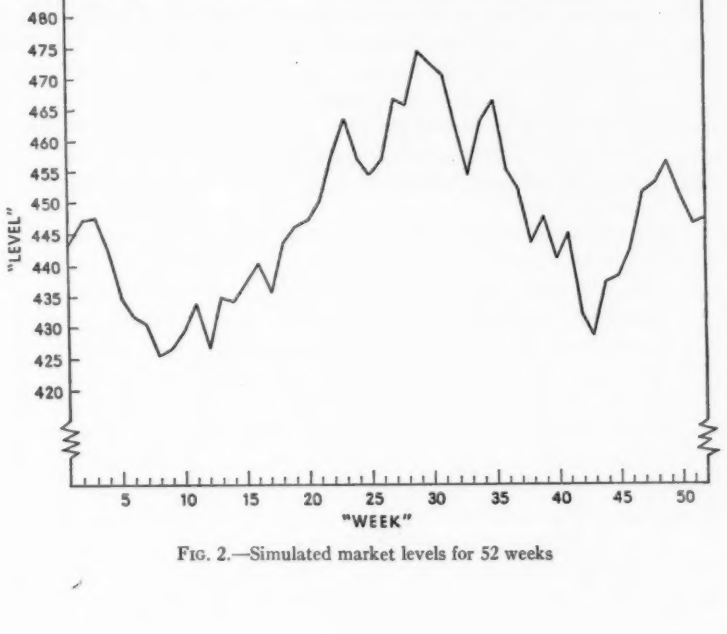

FIG. 2.—Simulated market levels for 52 weeks

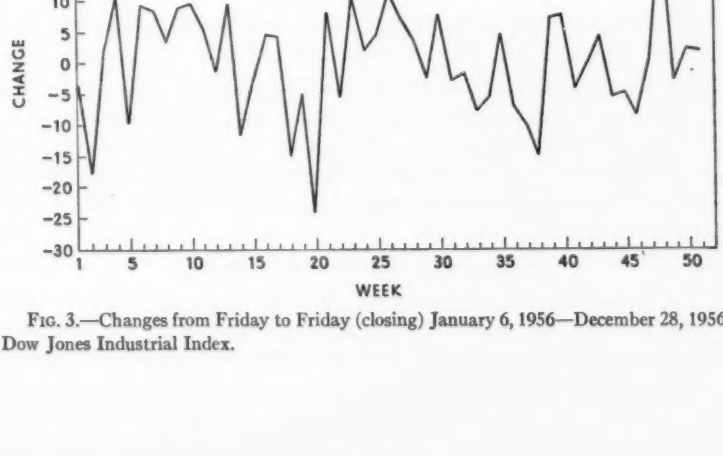

FIG. 3.—Changes from Friday to Friday (closing) January 6, 1956—December 28, 1956. Dow Jones Industrial Index.

ably could have imitated Figure 3 more closely by using a somewhat larger standard deviation than 5 in constructing the artificial series. It is well, however, to avoid giving the wrong impression by showing *too* striking a parallel in all details. Two artificial series constructed by precisely the same method typically differ from each other just as would two brothers or two years of market history. To put it differently, the chance model cannot duplicate history in any sense other than that in which one evening in a gambling casino duplicates an-

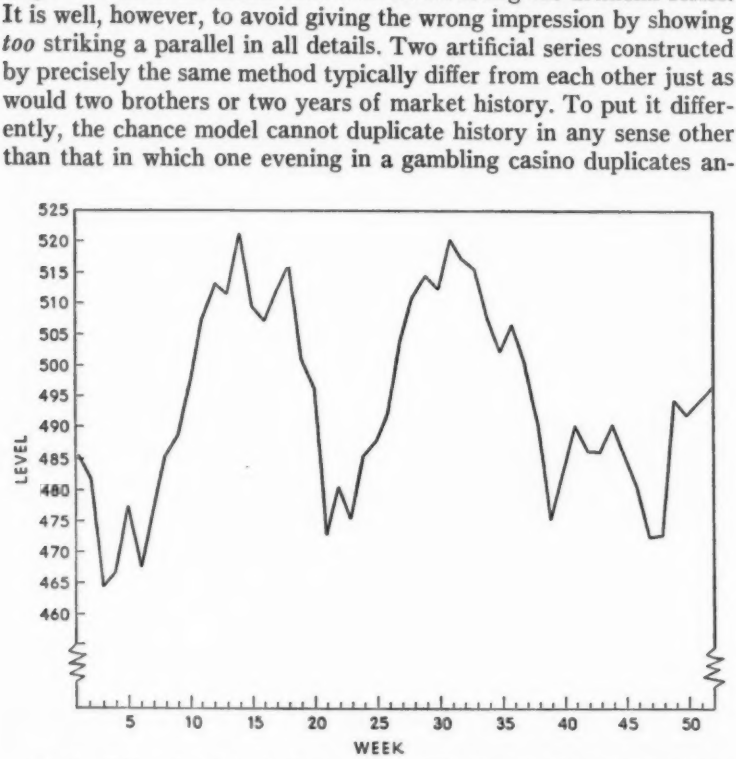

FIG. 4.—Friday closing levels, December 30, 1955—December 28, 1956. Dow Jones Industrial Index.

other. For relatively short periods of history like 52 weeks, there can be substantial differences. In fact, however, the dispersion of Figure 3 is almost surely greater than that of Figure 1 by more than we would expect from the same chance mechanism. We subsequently obtained a better simulation by using a standard deviation of 7 rather than 5.

MEANING OF THE CHANCE MODEL

There are two common reactions to this chance model: (1) while "chance" may be important in extremely short-run stock-market movements, it is inconceivable that the longer-term movement should

be a cumulation of short-term "chance" development; (2) once one reflects on the situation, it is obvious that a simple chance model must hold. We shall discuss each reaction briefly.

The first reaction stems partly from a misunderstanding of the term "chance." The chance model of the previous section was meant to illustrate the possibility of constructing a simple mechanical device that would duplicate many of the characteristic features of stock-market movements. Even if the statistical behavior of the market and the mechanical device were completely indistinguishable, it might still be possible to attain a degree of predictability better than that given by knowledge of past relative frequencies alone. To attain such predictability, however, more would be needed than the past history of market prices: e.g., economic theory and knowledge of economic facts might suggest relationships of market prices with other economic variables that might be of predictive value. It seems more likely that economic analysis could give predictive insight into stock-market behavior than that physical analysis could help with a real roulette wheel. Even completely deterministic phenomena, such as the decimal expansions of irrational numbers (e.g., e and π), appear to be "chance" phenomena to an observer who does not understand the underlying mechanism. Phenomena that can be described only as "chance" today, such as the emission of alpha particles in radioactive decay, may ultimately be understood in a deeper sense.

In another sense the reaction against "chance" is sound. Much more empirical work is needed, and it seems likely that departures from simple chance models will be found—if not for stock-market averages, then for individual stocks; if not for weekly periods, then for some other period; if not from the independence assumption, then from the assumption of a stable underlying distribution; etc. Indeed, the analytical proposals of this paper are based on the assumption that such departures will occasionally be found. Holbrook Working has discovered such departures in his commodity market research.[5]

As to the second reaction, that the chance model is obvious, there is a plausible rationale. "If the stock market behaved like a mechanically imperfect roulette wheel, people would notice the imperfections and by acting on them, remove them." This rationale is appealing, if for no other reason than its value as counterweight to the popular view of stock market "irrationality," but it is obviously incomplete.

5. Holbrook Working, "New Ideas and Methods for Price Research," *Journal of Farm Economics*, XXXVIII (1956), 1427–36.

For example, why should not observation of market imperfection lead to greater imperfection rather than less? All we can do is to suggest the importance of the study of such questions.

Suggestions for Financial Analysis

This section is devoted to statistical suggestions to financial analysts and others who make their living by the study of the market. The fundamental suggestion, of course, is to analyze price *changes* as well as price *levels*. Initially, the weekly change seems worth using, but other time periods may also be useful. This suggestion seems trivial, but it is not. If the simple chance hypothesis is correct, then the statistical behavior of changes, which are independent, is much simpler than that of levels, which are not. There already exists, for example, a body of statistical techniques for analysis of independent data: in fact, modern statistical theory has been largely built up on the assumption of independence. Much of it also assumes, as we did for convenience in the artificial example, that the underlying distribution is a normal distribution in the technical sense of that term. The assumption of normality usually seems far less crucial to the applicability of statistical methods than does that of independence, and some statistical techniques, called "non-parametric," do not make the normality assumption.

If one graphs weekly changes without any formal statistical analysis, he will have taken the most important single step. So long as the stock or stock index behaves like a reasonably good roulette wheel, the visual impression will be similar to that of Figures 1 and 3. If there is a really fundamental shift in the underlying situation, it can be detected visually more readily by an analysis of changes than of levels. Conversely, if there has been no fundamental shift, a graph of changes will be much less likely to give the impression that there has been a shift.

There are formal statistical techniques to supplement visual analysis (though never to replace it entirely, since graphical study is always partial insurance against misapplication of statistical analysis). The most popular field of applied statistics—industrial quality control—draws on these techniques extensively. Though there would undoubtedly be many differences in detail, a financial analyst should find much of interest and relevance in methods of quality control.[6]

6. W. Allen Wallis and Harry V. Roberts, *Statistics: A New Approach* (Glencoe, Ill.: Free Press, 1956), chaps. 16, 18; A. Hald, *Statistical Theory with Engineering Applications* (New York: John Wiley & Sons, Inc., 1952), chap. 13; Eugene L. Grant, *Statistical Quality Control* (rev. ed.; New York: McGraw-Hill Book Co., Inc., 1952).

We shall illustrate briefly how these ideas might be applied in financial analysis. For concreteness, we begin with the data given graphically in Figure 3.

1. The first question is that of independence: Can we regard these weekly changes as independent? Purely to illustrate one test of independence, we shall apply a test based on runs above and below zero. If we denote a positive change by "+" and a negative change by "—", Figure 3 yields the following sequence of +'s and —'s.

− − + + − + + + + + + − + − − + + − − − + − + + + + + +
− + − − − − + − − − + + − − + − − − + + − + +

A "run" is a consecutive sequence of the same symbol: e.g., — —, + +, —, and + + + + + + are the first four runs. We count 24 runs, which does not differ significantly from the expected number of 26.41.[7]

There are many tests for independence, and experience will show the most useful ones for this kind of application. I would guess that the mean-square successive difference[8] would prove useful. This has the virtue of providing a descriptive measure of the degree of independence or dependence, as well as a test that gives simply an all-or-none verdict or a significance level. A slight degree of dependence may not invalidate subsequent analysis of the kind proposed here, while substantial dependence may open the way for forecasts that exploit the observed pattern, just as one might do by careful study of a defective roulette wheel.

The idea of "rational subgroups" commonly used in industrial practice may be useful,[9] particularly in relating changes for different intervals of time, such as days and weeks.

2. If substantial dependence is found, it may be directly useful for forecasting, using the well-known methods of autoregression. Dependence may also suggest useful avenues for investigation. A sharp jump in the level of price changes for a particular stock, for example, might be found to coincide with a change in management. The company's history since that change would then be the object of an analysis like that described in the preceding paragraph.

3. If a close approximation to independence is found for any moderately large number of weeks (say at least 52, as a rule of thumb), set up "control limits" to aid visual analysis in the future.

7. For mechanical details see Wallis and Roberts, *op. cit.*

8. *Ibid.*

9. Grant, *op. cit.*

These limits can be calculated in many ways.[10] If a point falls outside the control limits, this gives a signal for the analyst to search for an explanation beyond the series itself: e.g., company developments, economic changes, governmental actions. So long as points stay within the limits, there is no need for special attention, although there may also be supplemental warning signals based on gradual shifts that cause trends but do not immediately throw points outside control limits. There will be risks of failing to search when a search is warranted and of searching when nothing is to be found. These risks can be evaluated and the control limits determined accordingly. The aim of the procedure is to economize the time of the financial analyst, who cannot possibly be simultaneously in close contact with the many individual companies that he must be familiar with. It should tend to avoid the numerous false signals that are so strongly suggested by examination of levels rather than changes.

This outline of statistical procedure is meant only to be suggestive. The general nature of the statistical attack is obvious, but the details will be supplied with practical experience guided by sound statistical theory. It may be found, for example, that it is wiser to analyze changes of logarithms or square roots of levels than absolute changes, especially when long periods of time are examined. But much is to be gained simply by viewing a familiar problem from a new vantage point, and minor statistical refinements or blemishes may not be crucial.

These statistical suggestions are only a preliminary to the real work of the financial analyst, which extends far beyond the tape itself and draws on knowledge and skills, including statistical knowledge and skills, that are not discussed here. There is every reason to believe, however, that this method of looking at the tape will facilitate all that takes place afterward. Further statistical analysis, such as multiple regression, will be sounder if based on independent changes rather than dependent levels. Judgment and intuition will proceed more soundly if not hindered by an unnecessary grappling with market "patterns."

10. Wallis and Roberts, *op. cit.*; Hald, *op. cit.*; and Grant, *op. cit.*

AN ESTIMATE OF BANK-ADMINISTERED PERSONAL TRUST FUNDS*

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IF WE MAY BELIEVE the National Accounts Review Committee, "the absence of regular, comprehensive, reliable and, above all, standardized information on personal trust funds is one of the most important gaps in our financial information, keenly felt not only in the construction of flow-of-funds statements but also in the study of saving and in many other aspects of financial analysis."[1] This almost complete lack of statistics on personal trust funds is fortunately in the process of being remedied through a sample survey of the personal trust departments of commercial banks now being prepared by the American Bankers Association with the assistance of the Federal Reserve System. However, the figures resulting from the new survey —the first promise of reasonably satisfactory material in this field— will cover no date before the end of 1958.

We shall therefore still be forced to use rougher estimates for historical comparisons and for analyses of the role of personal trust funds in the past. Such estimates are needed, for instance, for any comprehensive study of the capital market in the postwar period because of the large size, in both absolute and relative terms, of personal trust funds. At the present time the personal trust departments of commercial banks administer about $80 billion worth of personal trust funds. Substantial additional sums, about which even less is known, though they are certainly considerably smaller than bank-administered personal trust funds, are in the care of attorneys and other non-corporate trustees. The personal trust funds administered

* This paper is a by-product of the Postwar Capital Market Study of the National Bureau of Economic Research (cf. *Thirty-eighth Annual Report*, pp. 67 ff.) but has not been subject to the Bureau's usual review procedure and therefore is not to be regarded as a National Bureau publication.

1. *The National Economic Accounts of the United States: Hearings before the Subcommittee on Economic Statistics of the Joint Economic Committee, Congress of the United States* (85th Cong., 1st sess. [1957]), p. 239.

by banks and trust companies alone are almost as large, measured by total assets, as life insurance companies and are much larger than several important groups of financial institutions, e.g., property insurance companies, investment companies, savings banks, and savings and loan associations, about which a great deal of statistical information is available and which have attracted considerable attention from economists.

For these reasons it was felt necessary, within the framework of the general study of the postwar capital markets conducted by the National Bureau of Economic Research,[2] to produce the best—or, to put it more realistically, the least objectionable—estimates that the very scanty data would permit, continuing and partly revising the similarly rough estimates made by one of the authors for a few benchmark dates before 1952.[3] These estimates, provisional and rough as they are, seem sufficiently interesting, given the almost complete dearth of statistical information in this field, to be made available ahead of the completion of the entire study with only a minimum of interpretation. When the results of the American Bankers Association survey are published, some of the estimates given here may, of course, need revision.

Trust institutions, as used in these estimates, refer to *corporations* engaged in trust business under authority of law. They include not only trust companies that are engaged in trust business exclusively but also trust departments of commercial banks. Personal trusts are those which arise by appointment of a trust institution as "trustee" through the instrumentality of a will or through an agreement of trust or deed of trust. Personal trusts, as defined here, are created primarily for natural persons and are exclusive of corporate trusts, employees' trusts, community trusts, and institutional trusts. This definition of personal trusts excludes other fiduciary relationships, such as executor or administrator of decedents' estates and conservator or guardian for minors and incompetents. It also excludes such relationships with trust institutions, contractually created by individuals and corporations, as agency, custody, and escrow accounts.

2. See *Journal of Finance* (May, 1957), pp. 121–25, and the *Thirty-sixth Annual Report* of the National Bureau of Economic Research, pp. 54–55; *Thirty-seventh Annual Report*, p. 34; and *Thirty-eighth Annual Report*, pp. 67 ff.

3. See Raymond W. Goldsmith, *A Study of Saving in the United States*, III, 73 (Princeton, N.J.: Princeton University Press, 1956); and mimeographed Appendix B to *Financial Intermediaries in the American Economy since 1900* (Princeton, N.J.: Princeton University Press, 1958).

Common trust funds are also excluded from our estimates of bank-administered personal trust funds.[4]

The estimates presented here are based on statements obtained from a small and slightly varying number of large personal trust departments of banks in the eastern part of the United States.[5] A substantially larger number of institutions than those which finally were able to supply the desired information was approached. The main difficulty in obtaining a larger number of usable statements was the circumstance that only a minority of trust institutions is as yet keeping the statistics of the individual trusts under their administration in a form which permits of a summarization on a uniform valuation basis—particularly the market value of assets—at or close to a given date.

A considerable amount of judgment and of checking against other sources was necessary in combining the data furnished by the co-operating institutions. Of outside data used as controls, mention may be made of the estimate of the New York Stock Exchange that bank-administered personal trust funds held $46.0 billion worth of stock at the end of 1955;[6] the common-stock transactions of a sample of bank-administered personal trust funds compiled by the Senate Committee on Banking;[7] the Federal Reserve Board report on the

4. Assets of common trust funds at the end of 1955 were estimated at $1,884 million, distributed as follows:

	(In Millions)
Cash	$ 10.2
United States government bonds	322.8
Corporate and other bonds	392.2
Preferred stock	215.6
Common stock	922.7
Mortgages and miscellaneous assets	20.1
	$1,833.7

(Source: National Bureau of Economic Research, Postwar Capital Market Study).

5. A mimeographed description of the estimating procedure is available upon request to the authors.

6. New York Stock Exchange, *Institutional Holdings and Statistics* (1957). In a recent article Victor Perlo ("'People's Capitalism' and Stock Ownership," *American Economic Review*, June, 1958, pp. 333–47) casts doubt on the adequacy of the New York Stock Exchange estimate of stock held by personal trusts which is used in this paper. He quotes an estimate of *Trusts and Estates*, February, 1956, p. 100, indicating personal trust stock holdings of $62.6 billion at the end of 1954. Perlo unfortunately neglected to examine the nature of this estimate and, even worse, disregarded the statement contained in the article that "the fiduciary figures include an undetermined but sizeable amount of assets held in custodian, escrow and agency accounts" (p. 101). It would appear, therefore, that the *Trust and Estate* figure is not in conflict with the New York Stock Exchange estimate, which refers to assets of bank-administered personal trusts alone.

7. United States Senate Committee on Banking and Currency, *Institutional Investors and the Stock Market, 1953–1955* (Washington, 1956), pp. 66 ff.

cash holdings of personal trust funds;[8] and the capitalization of the income from trust funds as reported by the Internal Revenue Service.[9]

As shown in Table 1, the market value of the assets of bank-administered personal trust funds was roughly constant from 1952 to 1953 and increased, on the average, by about $10 billion in 1954 and 1955. Most of this increase was attributable to the rise in common-stock prices.

TABLE 1*

ASSETS OF BANK-ADMINISTERED PERSONAL TRUST FUNDS
(In Billions of Dollars)

	1952	1953	1954	1955
1. U.S. government bonds	8.53	7.28	7.14	7.42
2. State and local government bonds	8.03	8.25	9.31	10.11
3. Corporate bonds	2.12	3.28	4.05	3.94
4. Preferred stock	2.24	2.13	2.56	2.46
5. Common stock	27.26	26.41	36.25	43.54
6. Mortgages	1.08	1.23	1.42	1.49
Subtotal	49.26	48.58	60.73	68.96
7. Real estate	1.99	(1.97)	(1.95)	1.93
8. Cash	2.50	2.60	2.90	3.10
9. Other	.94	(.93)	(.93)	.93
Subtotal	5.43	5.51	5.78	5.96
10. Total Assets	54.69	54.08	66.52	74.92
		As Percentages of Totals		
1. U.S. government bonds	15.6	13.5	10.7	9.9
2. State and local government bonds	14.7	15.2	14.0	13.5
3. Corporate bonds	3.9	6.1	6.1	5.3
4. Preferred stock	4.1	3.9	3.8	3.3
5. Common stock	49.8	48.8	54.5	58.1
6. Mortgages	2.0	2.3	2.1	2.0
Subtotal	90.1	89.8	91.3	92.1
7. Real estate	3.6	(3.6)	(2.9)	2.6
8. Cash	4.6	4.8	4.4	4.1
9. Other	1.7	(1.7)	(1.4)	1.2
Subtotal	9.9	10.2	8.7	8.0
10. Total assets	100.0	100.0	100.0	100.0

* Details may not add to totals because of rounding. Items in parentheses are interpolated figures.

From a comparison of these figures with the estimates of total outstanding securities provided in Table 2, it is clear that bank-administered personal trust funds are the largest single holder of corporate equities next to individuals. Also, personal trust funds are the largest holders of state and local government securities next to commercial banks. Personal trust funds, on the other hand, hold only small proportions of all United States government bonds, corporate bonds,

8. See, for instance, *Federal Reserve Bulletin*, July, 1955, p. 750.

9. *Statistics of Income for 1952*, p. 71.

and mortgages outstanding—in 1955, 3 per cent, 6 per cent, and 1 per cent, respectively.

The major interest of financial economists is in the changes in the total assets of personal trust funds and in their makeup. Obviously, changes in the holdings and in their composition—other than those reflecting solely changes in security prices—have important consequences in the securities market which stem from the investment policies of bank-administered personal trust funds. However, the

TABLE 2*

SECURITIES OUTSTANDING, 1955 (END OF YEAR) CLASSIFIED BY BROAD GROUPS OF HOLDERS
(In Billions of Dollars)

Type	Holdings of Personal Trusts (1)	Holdings of Financial Institutions† (2)	Total Outstanding (3)	Per Cent Column 1 to Column 2 (4)	Per Cent Column 1 to Column 3 (5)
1. U.S. government bonds	7.42	118.80	280.21	6.3	2.6
2. State and local government securities	10.11	20.23	40.03	50.0	25.3
3. Corporate bonds	3.94	54.04	69.02	7.3	5.7
4. Preferred stock	2.46	3.89	17.23	63.1	14.3
5. Common stock	43.54	25.57	354.01	170.3	12.3
6. Mortgages	1.49	100.79	129.99	1.5	1.1
7. Bank deposits and currency	3.10	5.21‡	201.33§	59.5	1.5

* Column (1) from Table 1; columns 2 and 3 from preliminary estimates from National Bureau of Economic Research, Postwar Capital Market Project.

† Includes life insurance companies, fire and casualty companies, fraternal orders, group health associations, savings-bank life insurance, non-insured pension plans, savings and loan associations, investment companies, credit unions, Federal Reserve System, Treasury monetary funds, commercial banks, mutual savings banks, postal savings system, agencies of foreign banks, banks in possessions.

‡ Includes holdings of government agencies and trusts but is total holder record, not obligor liability record.

§ Consolidated, therefore excludes holdings of banking system. Consists of holder record, i.e., adjusted for float.

aggregate data concerning security transactions of trust funds may not reflect solely, or even primarily, the policy of the banks administering these funds. Considerations underlying investment actions by trust institutions affecting the assets of individual trusts in their care may well vary with each individual trust and are influenced, among other things—apart from specific investment directives in the trust instrument—by (1) the size of the trust, (2) the purposes for which the trust was created, (3) provisions made in the underlying trust instrument for present and ultimate beneficiaries, (4) the age and income needs of present beneficiaries, (5) the probable time of termination of the trust, (6) the provisions of the trust instruments specifically concerning the investment responsibilities of the trustee, and (7) the views of co-trustees or consultants, if any. Thus, while

broad, general trust investment principles may be established (subject to revision from time to time) by a trust institution, the circumstances pertaining to and the requirements of each individual trust dictate the particular investment program appropriate to it.

As can be seen from Table 1, personal trust funds, like most financial institutions, have decreased their holdings of United States government bonds since 1952. Holdings of governments fell steadily both in absolute amount (except in 1955) and as a proportion of total assets. The holdings of state and local government bonds by personal trust funds increased by about $2 billion, or one-fourth, between 1952 and 1955; it is likely that this increase was encouraged by the rise in municipal yields after 1952. However, the proportion of total trust assets represented by state and local bonds declined slightly throughout the period except in 1953.

A larger proportion of personal trust funds is invested in the securities of corporations than in the securities of any other group. The holdings of corporate bonds increased sharply in absolute amount in 1953 and 1954 and, as a result, represented 5 per cent of total assets at the end of the period against less than 4 per cent at the beginning. Preferred stockholdings remained relatively constant and fell as a proportion of assets.[10]

The most striking change in the portfolio of personal trust funds was the very sharp increase in the common-stock holdings of these institutions. Common stocks held at the end of 1952 amounted to about $27 billion. By the end of 1955 the market value of these holdings had risen to $43.5 billion. The common-stock portfolio, which represented about 50 per cent of total assets at the end of 1952, had risen to about 58 per cent by the end of 1955.

This increase, however, reflects stock price changes rather than portfolio shifts or net inflows of funds. If the estimated market value of common stock held by bank-administered personal trust funds is deflated by means of a common-stock price index, the increase in common-stock holdings almost disappears (it is less than $2 billion between 1952 and 1955), and the absolute increase in total assets of personal trust funds from 1952 through 1955 becomes much smaller. With common stocks carried at December, 1952, prices throughout the period, total estimated assets of personal trust funds rise from

10. In retrospect we may have been in error in substituting the Federal Reserve Board's estimate of cash and deposits of $3.1 billion for personal trusts in 1955 for our universe total of $1.1 billion resulting from a blowup of our sample of respondents. If our estimate of cash and deposits is correct, then the total assets would be $72.90 billion, and all other assets remain as they now are.

$54.7 billion at the end of 1952 to $55.5 billion one year later, $57.3 billion two years later, and $58.0 billion at the end of 1955. This deflation points rather surprisingly to an only very small net inflow of funds into the personal trust departments over this period—on the average, slightly over $1 billion per year or less than 2 per cent of the average size of funds.

It is not easy to explain this phenomenon in the light of industry statements to the effect of rapid growth in this business. The continuing decline in the wealth share of the high-income groups to which the personal trust industry has historically always catered is a possible explanation. An alternative, if not a supplementary, explanation of the relatively small growth in the personal trust business in the recent past is the possibility that the investment returns on assets held by personal trust funds were at a competitive disadvantage with those handled by the investment counseling industry. It is conceivable that the wealthier people have gone more and more, so far as living rather than testamentary trusts are involved, to investment counselors because of higher rates of return from the funds under the latters' guidance. Since there are no data on the assets held, or administered, by investment counselors, it is not even possible to be certain that the funds in the care of investment advisory firms have risen more rapidly than those administered by personal trust departments. This lack of information coupled with the absence of data on average earnings of comparable funds administered by personal trust departments and by investment advisory services prevents any test of this hypothesis.

THEORY OF THE CAPITAL STRUCTURE OF THE FIRM*

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I. INTRODUCTION

IN BOTH ECONOMICS AND finance there hardly exists a complete model of the optimum capital structure of the firm. Many of the concepts needed to construct such a model are available in the literature, but in most cases the authors have been content to set up and use only such partial constructs as would serve their larger purposes.[1] The present article is an attempt to develop a self-contained theory of the financial structure of the individual firm.

It has been said that the problem of the capital or financial structure is a firm, not a plant, decision. The underlying notion is that, whereas the optimum output (a plant function) is uniquely determined if demand and costs are known, financing is, in large part, a matter of the individual taste for risk and is therefore an ownership or firm decision, for which a unique solution may not be possible. I should like to present the contrary view, that there is perhaps a single optimum capital structure for any given firm or that, at the least, the range of rational capital structures is narrowly bounded. In the real world, uncertainty and lack of knowledge as to the relevant variables may make this optimum solution a difficult achievement. Under cer-

* The author is indebted to Professor Elmer C. Bratt for valuable criticism on an earlier draft of this paper. He is very grateful to Professor Herbert Fraser, of Muhlenberg College, for many helpful and fertile suggestions.

1. M. Kalecki, "The Principle of Increasing Risk," *Economica*, Vol. IV (N.S.), No. 16 (November, 1937); R. G. Hawtrey, "The Trade Cycle and Capital Intensity," *Economica*, Vol. VII (N.S.), No. 24 (1940); Hyman P. Minsky, "Induced Investment and the Business Cycle" (unpublished doctoral dissertation, Harvard University, 1954), esp. chap. vi; Sidney Weintraub, *Price Theory* (New York, 1949), pp. 366–71; Friedrich Lutz, *Theory of Investment of the Firm* (Princeton, 1951), chap. xvi; David Durand, "Cost of Debt and Equity Funds for Business: Trends and Problems of Measurement," discussions by Clay J. Anderson and Martin W. Davenport in *Conference on Research in Business Finance* (New York: National Bureau of Economic Research, Inc., 1952). In the same volume Franco Modigliani and Morton Zeman, "The Effect of the Availability of Funds and the Terms Thereof on Business Investment," discussions by Lawrence R. Klein and George L. Bach. A more recent article by Modigliani and M. H. Miller, "The Cost of Capital, Corporation Finance, and the Theory of Investment," appeared in the *American Economic Review* for June, 1958. Both the Modigliani articles are, however, confined to the relationships between stocks and bonds and give little explicit consideration to the gains that a firm might acquire through the development of a complex financial structure discriminating among many possible sources of financing.

tain simplifying assumptions, however, a theoretical model of the relevant variables and functions can be constructed which does result in a single best financial structure. The usefulness of such a model is in the simplifying insights it may give us into the complexities of reality.

For many writers on corporation finance the term "the capital structure of the firm" seems to include only those sources of funds which are represented by securities.[2] This is too narrow a definition. It leaves one at a loss as to what to make of bank term loans, long-term insurance loans, and current liabilities. In its arbitrary distinction it implies that the borrower's risk involved in securing funds through fixed debt is somehow greater than borrowing on current account.[3] (The reverse is likely to be true.) The narrow definition of the financial structure—restricted essentially to stocks and bonds—ignores the large measure of substitutability existing between the various forms of external debt.[4] For purposes of this article the terms "capital structure" and "financial structure" are to be considered interchangeable. The phrase "the capital structure of the firm" means the total of all liabilities and ownership claims—the sum of what is usually the credit side of the balance sheet. The adoption of this broader definition of financial structure, i.e., the liability and net-worth side of the balance sheet, allows us to concentrate on what is recognized as the best single measure of gross risk—the ratio of total debt (including current items) to net worth.[5]

II. Basic Assumptions

It is well known that firms in various industries have developed typically different asset structures and that the composition of these asset structures must necessarily help determine the financing of the firm. It is, however, outside the scope of the present paper to discuss the economic rationale and development of optimum asset holdings. Thus the optimum asset structure of the firm is taken as one of the

2. See, for example, Guthann and Dougall, *Corporate Financial Policy* (New York: Prentice-Hall, Inc., 1955), pp. 213–90 and *passim*.

3. If the usual financial definition is followed, then, for example, a bank would never have any capital structure problems.

4. About two years ago the General Electric Company floated a debenture issue partly to secure net working capital, i.e., it used proceeds from long-term debt to reduce its reliance on current liabilities.

5. Of course, a more refined judgment of risk entails a thorough study of the composition of the debt structure. There is also the problem of such financing devices as preferred stocks, which are an element of risk as far as the common stockholder is concerned but an element of safety from the viewpoint of the creditors. In this article, for purposes of simplicity, "ownership" or "equity" capital refers only to the common shares.

parameters in the development of the argument, although its effect is explicitly recognized as constituting one of the factors contributing to the external risk of the firm and thus influencing its financing. Given this limitation, the following are the basic operating assumptions of the analysis:

1. The individual firm is confronted by two types of risks. One type we might call the "external risk," the other type the "internal" or "financial risk."[6]

2. The external risks are a composite of the *stability of earnings*, or cash flow of the firm, and the liquidity, safety, and marketability of the assets typically held by the firm.[7] This external risk is in large part dictated by the nature of the industry in which the firm is engaged and is not subject to any great extent to the control of the financial decision-makers.

3. The internal risk of the firm is the financial risk of its capital structure. It is set by the types of liabilities (whether short term or funded) that the firm carries and the amounts of these liabilities in proportion to the ownership or equity capital committed to the firm. These factors, together constituting the capital structure, can be varied considerably by the financial management.

4. The two types of risks together are the sum of the hazards to which the owners and creditors of the firm may be subjected. The aproach taken in this article is to consider the *external risks as a parameter* given by the nature of the industry; however, these external risks are borne in mind by both borrowers and lenders and necessarily influence the optimum financial risk that different types of firms will carry.

5. An optimum capital structure for any widely held company is one which maximizes the long-run value per share of the common stock on the market.[8] This is not quite the same as asserting that the optimum capital structure is one which will maximize profit or earnings per share. For both the earnings per share of stock and the *rate at which they are capitalized* must be considered. The amount of financial risk that a firm carries helps set the capitalization rate. If a firm's financial structure carries too much borrowers' risk, the market

6. The financial risk was divided into borrower's risk and lender's risk by Keynes in the *General Theory*, pp. 144–45.

7. Risk may be held to a minimum by a stable cash flow, as is true of utilities, or by the safety and liquidity of the assets, as is true of banks. In both cases the typical firm in these industries can afford relatively risky capital structures.

8. This should perhaps be amended to read: given any number of shares, the per share value should be maximized. Obviously, this criterion is not affected by such matters as stock splits, stock dividends, etc.

may set a lower price for the shares than it would give for similar shares with perhaps somewhat smaller earnings but less financial risk.

In order to maximize the *long-run* value of the common stock, the financial decision-makers—the management—will in general develop that financial framework which will cause the common shares to sell at the highest price on the present market.[9] However, the security markets are notoriously volatile and perhaps subject to irrational pressures; therefore, the financial managers are not guided solely by immediate market prices because they may remember or be aware that the discount rate for risk and liquidity is subject to extreme psychological shifts and that the costs and difficulties of reconstructing the financial structure might make survival difficult for any firm which adapted too uncritically to immediate market conditions.

Nevertheless, existing prices exert the major force in the making of financial decisions. For, although every spot price contains within it some element which is a forecast of future prices, the financial markets, which are not burdened by transportation or storage costs or hindered by physical interruptions of supply, are supposed to be especially adept at discounting anticipations. The prices prevailing in the security markets are the *most important* guides to financial management because supposedly changes in future prices have already been discounted.

III. Solving Certain Problems of the Capital Structure under the Simplifying Assumption of a Fixed Amount of Ownership Capital

Before proceeding to a general solution of the problem of the optimum financial structure, it may be useful to illustrate the process of discriminating against the supply of external funds by starting with a simplified model employing the major restraints that the firm has a fixed supply of equity capital and wishes mainly to maximize profit without regard to owners' risk. These assumptions are relaxed in Section IV.

Charts IA, IB, IC, and IIA, IIB, each illustrate possible earning and financial supply functions facing various firms. The horizontal axis measures the amount of assets that might be employed. The ver-

9. This implies that the management and common stockholders' interests run parallel. This is, of course, not always true. However, it may not be too amiss to suggest that, in general, the area of common interest is greater than the area of possible conflict; it is likely that, by and large, the income and prestige of the management rises with the economic satisfaction of the stockholders.

tical axis measures gross yield or rates of return. The line *MRE* in every case designates the marginal rate of earnings for the corresponding volume of assets; it represents the incremental rate of return that can be obtained by adding additional assets to the firm; the area under the curve (the integral) represents the total earnings for those assets.[10] Of course, given uncertainty, the theoretical *MRE* curve has just a probability location, with a potential dispersion of outcome greater for some firms than for others.

The *MRE* curve has been drawn with a downward slope. This assumes limitations to managerial talent or organizational ability and the possible existence of competitive or physical difficulties which at any point of time preclude the assimilation of continual increments of assets at the same rate of profits.

Charts IA, IB, IC, and IIA, IIB also depict the supply curve of outside funds, given the restraint of a fixed amount of ownership capital. Line *OC* represents the given amount of equity or ownership capital. From this point on, the *SEF* curve is drawn to represent the supply of external funds, facing firms of diverse *asset structure, inherent risks,* and *given different initial amounts of equity capital.*

Charts IA, IB, and IC are hypothetical examples of three firms relying basically on book credit for their external funds. In these cases the *SEF* curve is discontinuous; it starts out along the axis for some distance before breaking and continuing at a higher level. The first segment represents the amount of trade or current account credit usually available free or without explicit cost to any given firm. The first plateau represents the situation when all discounts are no longer met; then the use of trade credit becomes quite costly, i.e., the lost discounts, representing 12–30 per cent a year, are considered a financial expense. At some point, as various financial ratios deterio-

10. The *MRE* is based on internal rates of return for successive incremental bundles of assets.

$$C = \frac{q_1}{(1+r)} + \frac{q_2}{(1+r)^2} + \cdots \frac{q_n}{(1+r)^n} + \frac{S_n}{(1+r)^n},$$

where C stands for the cost of the assets; q, the annual net returns; S, the scrap value or remaining value of the assets after a given number of years; and r the unknown rate of return that brings about the equality. Perhaps the internal rate of return is not the best method of ranking investment possibilities when the firm is faced with exclusive alternatives and when the time periods of two investments differ (see A. A. Alchian, "The Rate of Interest, Fisher's Rate of Return over Costs, and Keynes' Internal Rate of Return," *American Economic Review,* December, 1955; and J. H. Lorie and L. J. Savage, "Three Problems in Rationing Capital," *Journal of Business,* October, 1955). However, if we consider that the use of the assets will be more or less renewable at similar rates of earnings, the internal rate of return may serve quite well to rank opportunities for a "going concern" (thus see Romney Robinson, "Interest-Return over Cost or Internal Rates: Comment," *American Economic Review,* December, 1956).

CHART I

FIRMS WHOSE SUPPLY OF OUTSIDE CAPITAL IS DISCONTINUOUS, DERIVED MAINLY FROM TRADE CREDITORS

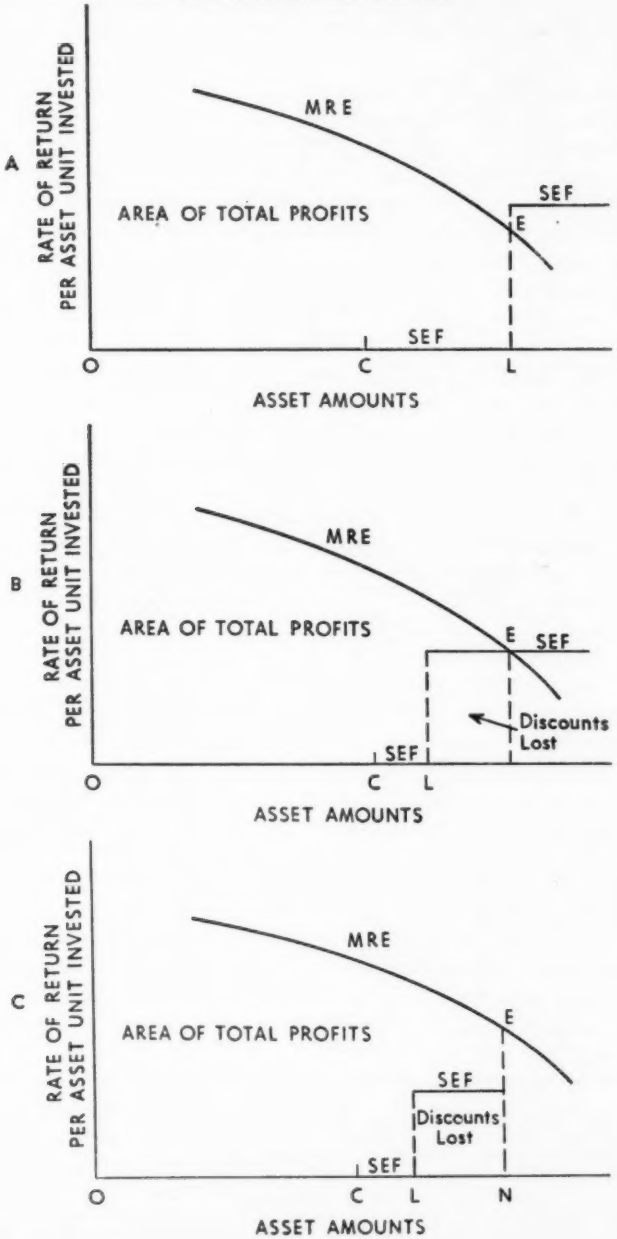


CHART IIA

EQUILIBRIUM FINANCIAL STRUCTURE SOLUTION FOR A FIRM WHOSE SUPPLY OF OUTSIDE CAPITAL APPROACHES CONTINUITY UNDER CONDITIONS WHERE DISCRIMINATION IS UNFEASIBLE

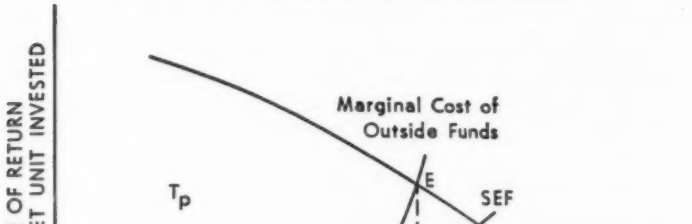
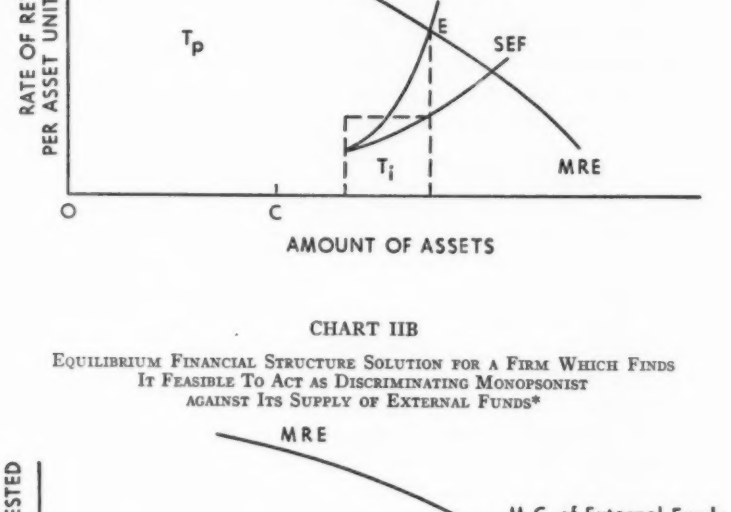


CHART IIB

EQUILIBRIUM FINANCIAL STRUCTURE SOLUTION FOR A FIRM WHICH FINDS IT FEASIBLE TO ACT AS DISCRIMINATING MONOPSONIST AGAINST ITS SUPPLY OF EXTERNAL FUNDS*



* As in Chart IIA, the amount of equity capital is held constant.

rate, further extension of trade credit may cease; this is shown by the discontinuity in the plateau representing the final amount of assets that the firm is likely to acquire.

Under our restricted assumptions, point *E* represents the equilibrium size—the total amount of assets acquired—and the total liability and equity of the firm. Since for firms relying on trade credit the average cost and the marginal costs of outside funds are the same, point *E* is placed where the *SEF* curve intersects the *MRE* curve. Firm A then illustrates a company whose equity relative to its asset structure and earning potential is large enough that it never has to forego trade discounts; firm B loses some discounts in order to obtain additional earning assets; and firm C is a company which faces Hawtrey's "wall"; it has used up its ration of trade credit entirely.

For firms of somewhat larger size and more complex structure, other types of credit besides accounts payable enter the *SEF* function, bank credit becomes available at a lower rate than non-discounted trade credit, and various other types of long- and short-term credit may be tapped. In the case of the large company which can draw its funds from many sources, although always at increasing risk for each category of loan, the *SEF* function may begin to assume a smooth shape. Thus for theoretical and expository purposes in Charts IIA and IIB we constructed the *SEF* function as a continuous curve.

Given a fixed ownership capital base, the characteristic supply function of external funds will vary for firms with different typical asset structures and external risk. Those firms in which the dispersion of the return outcomes is great or those having more assets of specialized nature will have steeper supply curves of external funds (i.e., relatively inelastic) with a shorter stretch of free book credit. Those firms in which the risk of the rate-of-return fluctuation is less will have an *SEF* curve which contains more trade credit and runs almost horizontally (i.e., is relatively elastic) over a considerable range. The point to be noted is that the supply price of outside capital rises individually to each firm, since, as long as the amount of equity is unchanged, there is an increasing risk to both the owners and the creditors as more liability funds are offered. Thus each firm is in a monopsonistic position relative to its supply of lender's capital.

On all charts the equilibrium position of the firm has been indicated at point *E*. The area *Ti* surrounding the *SEF* curve up to point *E* represents the total financial charges that would have to be paid for outside funds. All the rest of the area (Tp) under the *MRE* curve represents the accounting profits that accrue to the owners.

In those cases where the *SEF* function was discontinuous (Charts IA, IB, and IC) the equilibrium position (E) was found rather simply at the intersection of the *SEF* and *MRE* curves. Where, however, the *SEF* curve is more complex and takes the shape of a smooth curve, the equilibrium position is influenced by how effectively the firm can discriminate against the supply curve of capital.[11] If the firm cannot economically and feasibly break its borrowing into independent categories, it must consider the cost of its total borrowing as it obtains more outside funds. In this case the optimum position is determined by taking a marginal-cost curve of borrowing from the *SEF* function. The intersection of this marginal-cost curve and the *MRE* curve determines the equilibrium position and the amount of assets used. The amount of outside funds actually used and the rate paid for these outside funds are obtained by dropping down to the appropriate position on the *SEF* curve (see Chart IIA).

The firms (illustrated in Chart IIA) which use the non-discriminating monopsonist solution are probably those in which there is some instability in the rate of earnings over time. Because the risk of both lenders and borrowers rises rather sharply, with increased debt, the *SEF* curve is relatively inelastic. It is difficult under these circumstances to break the capital structure into separate categories. Nevertheless, such a firm does not equate the marginal return on its assets with a final average interest rate but finds a greater total profit by borrowing less and paying a lower rate for the total funds.

The concept of using a curve marginal to the *SEF* curve to obtain a maximum position might give an explanation for certain observed financial phenomena. For example, a well-known rule-of-thumb measure of the margin of safety existing for the use of outside funds is the "times–interest-earned" ratio. This is usually stated as the figure obtained by dividing annual interest charges into total earnings before taxes and interest. As long as a considerable portion of equity capital exists in the financial structure and the intra-marginal assets earn more for the firm than the interest charges, in normal periods at least, this ratio will be greater than 1. It would seem that the times–interest-earned ratio is a measure of average safety and should *not affect marginal financing decisions*. Nevertheless, even an incremental investment project may not obtain managerial approval unless the proposal has a prospective return *considerably* in excess of the immediate cost of the funds to be used; for the firm may consider

11. The idea that a complex capital structure represents an attempt by the firm to discriminate against the rising supply price of loan capital may be found in J. R. Hicks, *Value and Capital* (2d ed.; Oxford: Oxford University Press, 1900), p. 144 n.

that the incremental borrowing may cause the price on all previous borrowings to rise.[12]

Chart IIB illustrates the case in which the supply of funds to the firm is capable of segmentation; i.e., different bargains can be made with various classes of lenders, each having a different preference for and each assuming a different degree of risk. This firm is able to discriminate more effectively against its *SEF* function than the firm illustrated in Chart IIA and can obtain as additional profits for its stockholders some of the area between the *SEF* curve and the final equilibrium position (*E*) on the *MRE* curve.

In Chart IIB the non-discriminatory solution is superimposed on the discriminatory solution. The *SEF* curve for a single primary issue is indicated as the lowest supply curve. If the firm followed the non-discriminatory solution, it would halt its borrowing where the marginal cost of this borrowing equaled the marginal return on its assets, point *E*, and borrow on this issue the amount *LN*, paying the rate *LK* and a total charge for outside funds indicated by *Ti* (or rectangle *LKJN*). By discriminating, it is able to borrow amount *LQ* on issue *A* at the prime rate for such issues, and then borrow amount *QN* on issue *B* at a higher rate. The total amount borrowed is *LN*, but the total charges paid are the summation of rectangles A_i and B_i. The necessary condition for the superiority of the discriminating solution is that the area A_i plus B_i be less than *Ti* (rectangle *LKJN*).[13]

The possible profitability of discrimination can be illustrated alternatively by simple arithmetic. For example, the financing charges to

12. Additional borrowing cannot change the present rate on previously borrowed funds, but it may raise the rate when the firm enters the market for refinancing. In any case, the notion that the firm must reckon not merely with the market interest rate but with a rising marginal cost of funds probably makes the level of the interest rate a much more important factor in firm decisions than many economists have thought. In an over-all sense it may mean that monetary policy has considerable efficacy in the "normal" economy.

13. It should be noted that the supply curve for secondary issue B is drawn above the *SEF* curve that would exist on a primary issue. One reason for this is the extra fixed costs that a firm will have to meet if it floats an additional issue. However, the supply price for borrowing on subordinated issues would be above the equivalent primary issue rate at the same amount, whether these fixed charges existed or not. This is due to the different risk situation which faces the potential lender. The marginal lender on any issue increases the risk of that entire issue, but he and the other lenders share the same average risk on the whole issue. A new issue, however, opens a new and higher risk category. It is not at all equivalent for a lender to come in on the purchase of an $80 million prime issue, or to come in on the purchase of a secondary $20 million issue after $60 million of a *higher-priority* issue has already been floated. Owing to the necessity of giving lower protective priority to secondary lenders than to the primary lenders, it is impossible to conceive of a perfect discriminatory solution against the *SEF* curve—at least not under the assumptions upon which this function has been constructed.

a firm which used a single prime issue of $80 million at an effective rate of 4½ per cent ($3,600,000 annual charge) would be $200,000 more expensive than the same amount of financing through the use of two issues—a prime security of $60 million at 4 per cent ($2,400,000 annual charge) and a subordinate issue of $20 million at 5 per cent ($1,000,000 annual charge; total charges $3,400,000).

Monopsonistic discrimination against the suppliers of funds leads to complex capital structures. It exists whenever the market for funds contains suppliers, institutions or individuals, with different preferences for income and aversions to risk. It would seem to be practicable where the amount of total financing is relatively large, since the fixed costs of moving into a new type of issue are proportionately higher, the smaller the issue, and these costs would make this type of discrimination uneconomic where the total sum to be borrowed is relatively small. Furthermore, this type of operation is most feasible where the *MRE* curve is estimated to be relatively stable; for otherwise the *SEF* function would turn inelastic toward its outer extremity and the borrower could not discriminate in large enough segments (i.e., float big enough issues of the secondary securities) to make it profitable. The public utilities probably best illustrate the possibility of using a complex financial structure, since they have the necessary characteristics of (1) large total financing and (2) relative stability of earnings.

IV. The General Solution—Debt and Equity Both Variable

In Section III we considered certain adjustments that the firm might make vis-à-vis its supply of outside funds if its supply of equity capital were fixed and if it were primarily interested in maximizing its return on this capital. These assumptions are unrealistic and are used solely for convenience in illustrating discrimination against the supply of external funds. To solve the general case, the amount of both ownership capital and borrowings must be considered variable and substitutable. But equity capital and loan capital *are not perfect substitutes,* for the factor of increasing risk makes the price of borrowing rise as external funds replace ownership funds. Furthermore, the borrower's (or stockholder's) risk increases with a larger proportion of debt to equity in the capital structure. Thus, as long as the marginal rate of earnings on assets is downward-sloping, these factors make it possible to solve for the optimum capital struc-

ture—the amounts of equity and debt which will allow the common shares to obtain the highest price on the market.

The validity of the maximization of the per share price as the criterion of the optimum capital structure is dependent on there being a number of shareholders, each with a limited investment in the firm. Given a definite holding on the part of each stockholder, developing a capital structure which brings the common stock to the highest market price will maximize the position of each individual stockholder. This criterion holds, whether we are considering a block of new financing for an old firm or the creation of a new firm *ab nova*. In the case of the new firm, let us imagine a promoter (typically rewarded with a block of stock) and/or a group of initial investors now seeking additional funds in the equity and debt markets. Toward what financial structure should they move? Obviously, toward the one which maximizes the value of the ordinary shares, i.e., the one which also maximizes the value of their holdings.[14] (If blocks of stock are sold over time at different prices, one may conceive of this as a process of discriminating in the market for equity funds.) An established firm in a suboptimum position contemplating new financing for expansion or some other financial change should move to enhance the position of the present shareholders by selecting that financial mix which maximizes the value of the common shares.

Chart IIIA is the first step in our general solution of the optimum capital structure; it depicts a hypothetical firm which is faced with a whole set of supply curves of external funds, each curve being pertinent to a particular amount of ownership capital. The variable amounts of ownership capital are represented by stubs, OC_1, OC_2, etc., and the *SEF* functions which are applicable to these points are labeled SEF_1, SEF_2, etc. These *SEF* functions have been drawn to conform to the notion of increasing lender's risk. The major objective determinant of lender's risk is the debt-to-equity ratio. Each supply of external funds function should be constructed so that at the same interest rate point on each curve the debt-equity ratio is also equal. Since each successive *SEF* function starts out from a larger amount of ownership capital, *equal absolute amounts of borrowing* always represent a lower debt-equity ratio and can be obtained at a lower

14. If the initial group is closely related and has unlimited funds relative to the economic scale of the proposed firm, a different maximand may be postulated. Here the optimum condition may be a maximization of the *difference* between the market value of the *total* equity and the price of the assets invested by the ownership group. This solution would coincide with a maximum per share price only under unlikely conditions of inelasticity—if the issue of more shares should drop the value of all the shares more than proportionately.

CHART IIIA

SUPPLY FUNCTIONS OF OUTSIDE FUNDS WHICH FACE AN INDIVIDUAL FIRM AS THE AMOUNT OF EQUITY CAPITAL IS VARIED

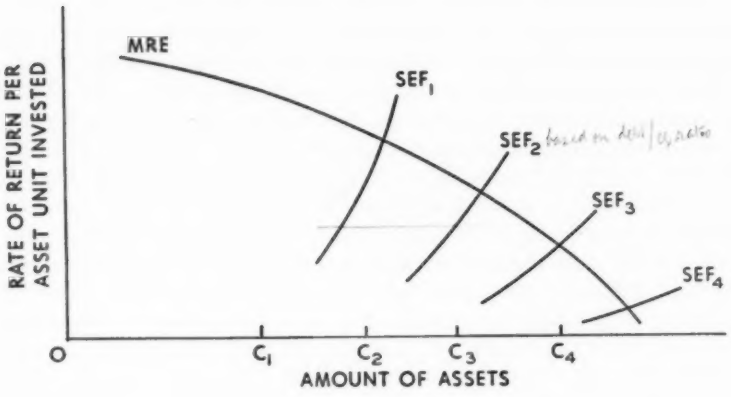


CHART IIIB

FORMAL SOLUTION OF THE OPTIMUM CAPITAL STRUCTURE OF TWO HYPOTHETICAL FIRMS

FIRM 1

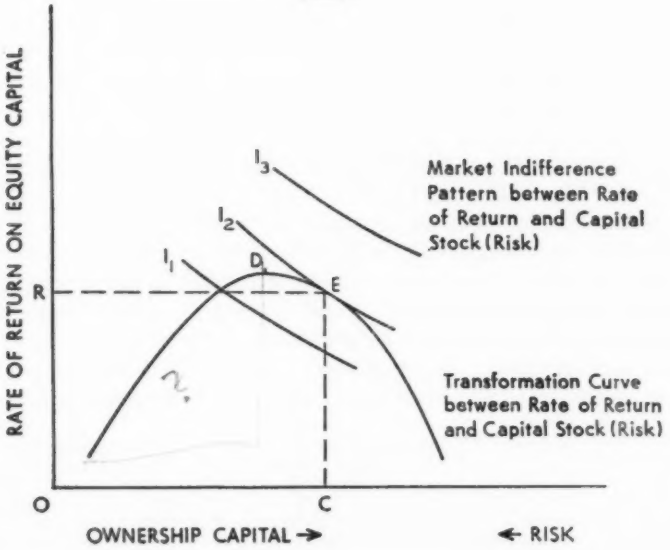
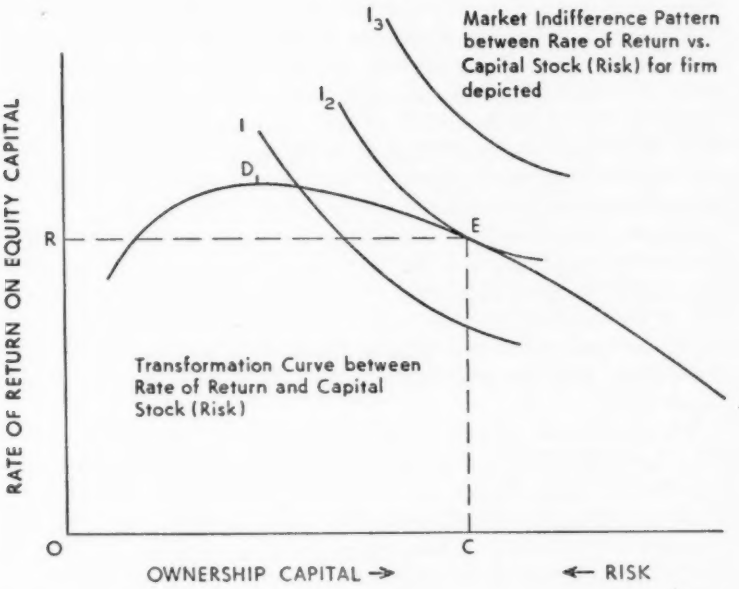


CHART IIIC
FIRM 2



interest rate. Conversely, a lower interest rate always signifies a lower debt-equity ratio. Thus, for any firm with a given earnings potential, the successive *SEF* curves will start at a lower price (interest rate) and will have a smaller slope.[15]

According to the analysis presented in Section III, there exists an optimum amount of borrowing for every amount of equity. Thus for every firm, given the amount of equity, we can determine (1) the amount of borrowing; (2) the amount of total assets; and (3) the ratio of equity to debt, which decreases for each successive *OC*. What we must find out is the optimum amount of ownership capital.

For every combination of ownership capital and supply of external funds depicted in Chart IIIA there exists a total profit or earnings; this is the area under the *MRE* curve extending over the amount of total assets committed, less the financial charges for the optimum

15. Although the slope of such successive *SEF* function is less, they would have the same elasticity at each interest rate.

amount of outside funds.[16] In the present context the important consideration is the rate of return per unit of equity capital, and this is easily obtained by dividing the total profit (which is determinate for every capital structure) by the pertinent amounts of equity capital.

Thus the relationships contained in Chart IIIA can be used to derive another curve whose explicit co-ordinates are the rate of return on equity capital and the absolute amount of equity capital. Such curves for two hypothetical firms are presented in Charts IIIB and IIIC. The other relationships discussed in connection with Chart IIIA are implicit in the new charts. If the slope of the *MRE* function is negative and the firm operates within the marginal restraints, we can determine the amount of borrowing for each possible amount of ownership capital and also the total assets of the firm. Since a firm can borrow the same proportion of its equity at the same rate, regardless of the amount of equity capital, and since the marginal rate of return on total assets is declining, the interest rate on the optimum borrowings and the debt-equity ratio will be less for successively larger *OC*'s.

Thus one other element—the risk factor—is indicated indirectly in Charts IIIB and IIIC. As the amount of equity capital increases in a particular firm's capital structure, the debt-equity ratio and the amount of financial risk decrease. The rate of return is depicted as a function of the amount of ownership capital, and the amount of ownership capital is an inverse index of risk unique for each particular firm or, perhaps, class of firms .

In Charts IIIB and IIIC the segment of the rate-of-return-on-equity function before point *D* (the maximum rate of return) is inoperative for any firm which has open access to a supply of equity funds. For it would seem that, up until this point, both the rate of return could be increased and the risk element decreased by putting in more ownership funds. Perhaps a new firm, relatively small and unknown and limited to a small group for its ownership capital, might find itself operating in this area. In such a case the firm would make every attempt to plow back earnings or find other sources of equity capital. A firm which through changes in the economy is now overleveraged might also strive to raise more ownership capital to substitute for debt; however, if earnings on the assets were low, it is possible that the marginal rate of earnings which would be offered in an attempt to secure new equity funds, although higher than the rate

16. The amount of profit will, of course, be varied by how effectively the firm can discriminate against a given *SEF* function (see Sec. III).

the firm was presently earning, still might not be high enough to be competitively attractive.

At any rate, for the firm that has access to the capital market and the ability over time to change the amount of ownership capital, the declining segment of the rate-of-return function is the pertinent one. The exact location that the management would work toward is a question which our initial assumption (i.e., that the management will attempt to maximize the long-run market price of the common shares) may help solve. Let us posit a particular market indifference function representing a choice between profits and more stock (less risk) for a given type of firm.[17] Then the rate-of-return function for a particular firm can be superimposed on this surface. The maximum that will be paid in the market for this stock is shown in Charts IIIB and IIIC at the point of tangency, *E*, where the marginal rate of substitution between profit and the risk in the capital structure of this firm is equal to the marginal choice between risk and profit among the investors in the market. This is, of course, the point of tangency between the rate-of-return function and the market indifference surface. Past point *E* toward the right, the investors feel that any reduction in the risk of the capital structure does not compensate for the marginal loss in the rate of profits; toward the left, the investors feel that any rise in profits is not worth the additional risk assumed in the financial structure.[18]

To sum up, Charts IIIB and IIIC illustrate the equilibrium capital structure for two hypothetical firms. The transformation curve gives the average rate of return for financial structures containing different amounts of ownership capital. It is derived from a chart similar to III_A for each firm. Since the amount of ownership capital in propor-

17. This indifference-curve pattern is unique for each particular firm or type of firm because the functional relationship between risk and earnings and risk and ownership capital—determined as it is by the stability of earnings, the stability of the cash flow, and the liquidity of the asset structure—varies for different firms. We could have constructed a market indifference pattern which was general for risk versus earnings in all investments; but, to use it in the analysis, we should have had to construct a pure risk versus rate-of-return transformation function for each firm function. It is better to use the rate-of-return versus ownership-capital function, because, although risk underlies the investor's choice, it is the debt-equity ratio determined by the amount of ownership capital which is the objective measure of risk. It is to the amount of ownership capital for each firm that the market reacts. By using our method we shall be able to proceed immediately to the determination of the optimum capital structure for a given firm without tracing our solution back through an intermediate and highly subjective risk function.

18. The author foresees some objection here. The indifference pattern is only hypothetical; how in actuality would a firm reach the optimum capital structure? The answer is, of course, how all such complicated solutions are reached in practice: by the exercise of the managerial art, by a movement of successive approximations until the best position is bracketed in. It would be expected that in a competitive situation the modal firms would cluster at the optimum solution.

tion to the total assets of the firm is an index of risk, risk is also measured on the horizontal axis as an inverse of the amount of ownership or equity capital. On each chart the tangency point E indicates the optimum amount of equity capital and rate of return on equity capital for each firm. In brief the conditions of the optimum are:

$$\frac{\text{Marginal sacrifice in earnings}}{\text{Marginal decrease in risk}} \text{ (investor's choice)}$$

$$= \frac{\text{Marginal decrease in earnings}}{\text{Marginal increase in ownership capital (decrease risk)}} \text{ (in the financial structure of the firm).}$$

The letter R indicates the optimum rate of earnings on equity investment and OC the optimum amount of equity capital for each firm. If the optimum amount (OC) of the ownership capital is carried back to a chart similar to IIIA for each firm, the corresponding SEF function will apply, and the static size of the firm and the whole complex of the firm's capital structure (debt to equity, etc.) is determinate.[19]

Having proceeded thus far, what does our model tell us about the typical different capital structures that appear in different industries? In the electric utility industry the cash flow tends to be quite stable, and lender's risk tends to be relatively low. This means that the firm in this industry can borrow a considerable amount on a relatively small equity base without tipping the SEF curve sharply upward. The result is that the marginal rate of substitution in the transformation curve between capital stock and earnings is relatively inelastic; i.e., a small cutback in the amount of equity in the capital structure leads to a significant increase in earnings per share. Stated conversely, since an increase in equity will have relatively little effect in lowering the firm's interest rate, the resulting decrease in leverage will reduce the rate of return on equity considerably. Furthermore, the subjective borrowers' risk for potential shareholders is also relatively

19. Much of the above discussion can be illustrated very roughly by arithmetic means, as follows: Suppose we have three firms, X, Y, Z, all in the same line of business and almost the same size. Firm X has no debt (leverage) and earns about $2.00 a common share; firm Y has some moderate proportion of debt (leverage) and earns $2.50 a year; whereas firm Z is overly leveraged (has a highly risky capital structure) and earns $3.00 a year per common share. Suppose, further, that in light of firm X's conservative financing, the market gives it a price/earnings ratio of 12 (capitalization rate of 8½ per cent); that the market gives firm Y a P/E of 10 (capitalization rate of 10 per cent); and firm Z's common, because of the high risk, is given a P/E of only 8 (capitalization rate of 12½ per cent). Then the shares of X will sell for $24, Y for $25, and Z for $24. Company Y may be presumed to have the optimal capital structure of the three (see Graham and Dodd, *Security Analysis* [New York: McGraw-Hill Book Co., 1951], chap. xxxvii).

low—because external risks are low—and the shareholders are willing to shoulder the responsibility for a large volume of debt in exchange for a greater rate of return. In other words, the reaction of both borrowers and lenders of funds to the circumstance of low external risks brings about an optimum capital structure which is relatively heavily leveraged.

Similarly, the asset structure of a bank is so composed that the external risks are considered to be extremely low. The borrowers (shareholders) are therefore willing to give a high capitalization rate to the earnings in spite of what would otherwise appear to be a most risky financial structure.

On the other hand, an industrial firm—facing heavier external risks—is likely to experience a relatively sharp rise in financing charges if its debt-to-equity ratio (leverage) exceeds certain proportions. This means that borrowing beyond a certain point does not bring a proportionate increase in profits; the transformation curve of ownership capital to rate of return is relatively elastic. Moreover, the capitalization rate on equity earnings may drop significantly for firms which are "riskily" financed in the eyes of the stockholders. Thus the typical industrial financial structure would tend to contain a smaller proportion of debt to total financing than either the utility or the bank.

We have attempted to incorporate something of the foregoing discussion in Charts IIIB and IIIC, which have been constructed to illustrate differences in financial structures under assumed conditions of varying external risks. Thus Chart IIIB might indicate a firm, such as an electric utility, for example, whose stability of earnings would induce the investors to accept a lesser amount of equity capital (i.e., a relatively *larger* amount of financial structure risk), whereas Chart IIIC would indicate a firm, perhaps a manufacturer, where the investors would prefer relatively less financial structure risk. Thus we have tried to depict the rate of change between the return on equity and the amount of ownership capital in the financial structure as relatively inelastic in firm B, and somewhat more elastic in firm C.

Reviewing the final solution illustrated in the series under Charts IIIB and IIIC, it might be well to discuss the concept of the final equilibrium rate of return or earnings, R. Charts IIIB and IIIC have been derived from functions similar to those depicted on Chart IIIA. The basic parameters for all functions are asset values and rates of return on asset values, earnings, or interest expense. Since all the firm functions are in terms of assets, the market indifference curve must also be constructed to give the marginal rate of substitution be-

tween earnings and risk in terms of assets. However, the rate of return on market price (let us call this r) is implicit in the indifference curves because the condition for the optimum at the point of tangency is that R/r be a maximum, which makes the market price of the shares a maximum. Thus as Charts IIIB and IIIC are constructed, R is not the rate of return on the *market price* of the firm's shares but the optimum return on the reproducible asset value of the equity.[20]

The discounting rate or the return on market price, r, is affected by external risks and financing risks. It is competitively determined by the rates prevailing on all other securities. The market price of the shares is derived from the relationship between the rate of earnings on equity and the market discount rate. If R exceeds r, the market price of the shares will be greater than the reproducible asset value and vice versa. However, in industries *which are competitive* the market price of the shares cannot exceed the true or reproducible asset value of the ownership shares without inducing the creation of new firms. *In competitive equilibrium the reproducible asset value of the ownership capital*[21] *and the market valuation of that capital must be equal for all optimally financed firms.* Of course, this need not hold true for firms which may have various competitive advantages or for industries which are adjusting to demand growth or decline or to changes in the production function.

An interesting sidelight may be developed here on the possible difference between competitive and monopolistic financing. For it would seem that the area of financial structure variation is quite narrowly bounded for the competitive firm. Thus, for any firm whose financial structure is heavily cushioned with equity capital in comparison to the production risks it seems to be carrying and whose stock, nevertheless, seems to sell at a considerable multiple of its asset value, one may be likely on closer examination to discover the possession of some monopolistic advantage. In certain firms which appear to be extremely conservative in their financial structure, the management may have elected to take out some of the monopolistic returns in the form of additional security. And, of course, excess security is not as open to criticism as excess profits.

20. To have used the market rate of return at this point would have been to anticipate our solution. We are looking precisely for that rate of earnings per share, given financial risk, which will maximize the market value of the common stock; the rate of return on the market price is thus the final result. For simplicity in exposition, we will assume some "normal" payout rate of dividends throughout this section.

21. Obviously, the reproducible asset value must include a charge to cover the costs of obtaining management and of working out the organization of the firm.

V. Adjustments for Growth and Capital Market Changes

So far our discussion has been static; we have tried to show how at a given point of time a firm will adjust its capital structure to its earnings potential and supply of available funds. The possibility of growth is, however, a perennially interesting one, and perhaps something should be said on the subject.

Given the model we have used, problems of growth can best be handled through the use of comparative statistics. Firm growth takes place either because the capital market terms change (the supply price of capital falls) or because there is an increase in demand for the firm's products. An increase in the supply of capital is equivalent to a rise in security prices or a fall in the money rates. In general (as is obvious in orthodox theory), such a fall in the money rates will encourage an expansion of the individual firm, since, all other things being constant, a favorable disparity will appear between the earning power of marginal assets and the additional full cost of the funds required to obtain them. It is important to recognize, however, that the *full* cost of the additional funds (including the cost of making changes in the capital mix) must decline in order to bring any expansion through a drop in the supply price of financing. It is possible, for example, for opposing changes in the price of outside funds and the risk preference on shares to take place in a way which would lead only to an offsetting use of one or the other without leading to any increase in the total asset size of the firm. A change would appear in the composition but not the size of the capital structure. It might even be possible that, although a drop in market interest rates takes place, a fall in the marginal preference for risk (i.e., a disinclination to borrow) could occur which would exactly offset the effect of the drop in the price of outside funds. In such a case no net change might occur at all in either the composition or the size of the captial structure.[22]

A firm may adjust its financial structure for changes in the terms of the financial markets; it may also adjust for growth and declines in the demand for its products. In our model such changes in demand can be represented by shifts in the *MRE* curve; a shift to the right represents a growth in demand and, to the left, a decline. As a matter of fact, in the real world such shifts are extremely relevant to the financial managers because the new financial moves called forth by

22. It was perhaps some phenomenon similar to this which militated against the success of monetary policy during the depth of the depression.

changes in the size of the firm make it easier to adjust the financial structure continually toward equilibrium.

A decline in the demand for the firm's products will release assets and funds which can be applied toward reducing the firm's financial structure. Usually, the funds in such a case will go to repaying debt, but there is no reason why some equity capital may not be repaid too, through an increase in the dividend payout rate, a payment of dividends from previously accumulated surplus, or, where allowed, through the use of tenders or the repurchase of stock on the open market. Exactly how the adjustment would take place between debt and equity (outside of some institutional problems) would depend on which way the firm must move to obtain an optimum capital structure (between risk and rate of return) for its new size.

The adjustment to an increase in the demand for the products of the firm is perhaps more interesting. An increase in demand for the firm's products is represented by a movement of the *MRE* curve to the right. This means that the marginal rate of earnings on the prevailing volume of assets shifts upward and that more assets could be added to the present firm before the marginal rate of earnings on these assets dropped back to the original level. In order to finance the new assets for expansion, the firm must analyze and explore the supply of funds in the new area. If the firm already has a large equity base (too large for the present optimum structure of the firm), then it may expand and purchase new assets with outside funds; if the firm's present financial structure varies from optimum in the other direction (i.e., the earnings on the ownership capital are overdiscounted because of too much leverage or risk), then the firm should choose to expand through an issue of additional stock or an attempt to build up surplus (retained ownership earnings). A firm which is already in the optimum position[23] will explore the possibilities of adding to both equity and debt. However, this addition does not necessarily have to be in the same proportion as the previous capital structure, for the optimum capital structure of the larger firm may not have the same relative composition as the smaller one.

Thus growth, perhaps even more readily than decline, gives the management an opportunity to recast the financial structure. However, the firm must probably reconsider the financing problem for each step of contemplated growth. Very likely, the stability of the earnings potential of new facilities will be regarded as less certain than on the old assets, and, inasmuch as the external risk is greater,

23. In a sense this is only a theoretical possibility. In a dynamic economy no firm at any single point of time is likely to have *the* optimum capital structure.

the financing may have to be more conservative for the new increment than that which already exists for the rest of the firm.

The necessity of arranging new financing probably constitutes a brake on the time rate of growth of the individual firm. Indeed, Professor Kalecki used as one of his models the large multiplant firm which has no technical limits on its growth, since it is able to invest in any area of the economy which is profitable, i.e., growing, without incurring any increase in risk or decline in earnings. This firm is presumed to have the same opportunities open to it as the general economy, and therefore the only restraint on its rate of growth is the problem of maintaining the proper financing mix between equity and debt.[24] The notion is interesting and quite correct on the basic assumption, except that one may doubt the existence of any significant number of firms that are so diversified and so well balanced in their resources and organization that they are free to enter any area of the economy without suffering a decrease in efficiency.

VI. Conclusion

Under the assumption that firms will attempt to maximize the long-run market value of the ownership shares, there exists an optimum capital structure for each individual firm. This optimum capital structure varies for firms in different industries because the typical asset structures and the stability of earnings which determine inherent risks vary for different types of production. The theoretical solution of the optimum capital structure is made in a very formal manner, since it must give consideration to many variables—increasing lender's risk, increasing borrower's risk, the interest-rate structure, the forecasted earnings function, and the possibility of discriminating against the market supply of outside capital. The limitations of the model are freely admitted; nevertheless, insofar as it casts new light on certain significant relationships—the debt-equity ratio, the stability of earnings, full costs of borrowing, and rates of return versus relative market distastes for risks—the approach seems useful.

24. M. Kalecki, "The Principle of Increasing Risk," *Economica,* IV (N.S.), No. 16 (November, 1937), 440–47; reprinted and revised in the *Theory of Economic Fluctuations* (New York, 1939), pp. 95–106; see also L. Wellisz, "Entrepreneur's Risk, Lender's Risk, and Investment," *Review of Economic Studies,* XX, No. 52 (1952–55), 105–14.

THE POLICY ACCEPTANCE IN THE UNITED STATES OF RELIANCE ON AUTOMATIC FISCAL STABILIZERS

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I. Introduction

Most economists in the United States would now include flexible taxes and transfers in their ideal fiscal programs. Widely differing emphasis would be given their role, however. Not only are various views held on how heavily economic stability should be weighted among various policy goals, but also divergences in opinion arise over the efficacy of automatic fiscal changes in promoting such a goal.

In contrast to this present concern with automatic stabilizers, discretionary fiscal changes would have dominated, if not completely occupied, the stage only a decade ago. And if we go back two decades, the preponderance of professional opinion would have favored insensitive taxes and transfers. Indeed, the major works on tax sensitivity up to the time that Bretherton made his important contribution[1] were motivated by the search for taxes that were *insensitive* to national income and would thus not unbalance depression budgets.[2]

Such a major change in attitude raises the interesting question of how and why it came about. It depended, of course, on the development of an adequate body of theory to point toward and support a changed position on fiscal policy, the high spots of which are reviewed in Section II of this paper. But the appeal of automatic stabilizers also depended on failures of discretionary policies, discussed in Section III. With this ground cleared, we then detail, in Section IV, the gradual appearance of automatic fiscal stabilizers in policy statements on governmental fiscal policy. A discussion of this sort cannot help leaning heavily on personal judgments. Yet the dominant pattern reveals itself clearly enough, I think, to minimize differences in personal interpretation.

1. R. F. Bretherton, "The Sensitivity of Taxes to Fluctuations in Trade," *Econometrica*, Vol. V (1937).

2. For example, Hugh Dalton, *Unbalanced Budgets* (London: Routledge, 1934); Ernesto d'Albergo, "Della sensibilità dell'imposta in rapporto alli fluctuazioni economiche," *Riforma sociale* (1934); Henry Laufenburger, "Fluctuations économiques et rendements fiscaux," Revue d'économie politique, Vol. XLVIII (1934); and "The Interplay of Taxation and Economic Fluctuations," *Index, Svenska Handelsbanken*, Vol. X (1935).

II. Development of the Theory of Automatic Fiscal Stabilization

The development of the theory of automatic fiscal stabilization is a long and complicated story, much of which took place in governmental bureaus during World War II. No detailed review need be attempted here, since Keiser has recently published a carefully documented paper on this history.[3] My own researches, rendered unnecessary by Keiser's work, agree generally with his findings, although I would give some episodes a different emphasis[4] and would make some additions to his bibliography.[5]

The major steps toward working out a theory in which taxes were recognized as automatic stabilizers seem to me to be the following. First, and obviously, it was necessary to demonstrate the potential incompatibility of an annually balanced budget with economic stability. This was a great contribution of Keynes, and the analysis was specifically applied to budget policy by Alvin Hansen and others. This early analysis and its policy implementation rested largely on expenditure manipulation, while the role of taxation was largely ignored.

The second step came with the full integration of taxes into income analysis—when a clear distinction had been drawn between shifts in a tax-yield schedule and movements along it. While some of the

3. Norman F. Keiser, "The Development of the Concept of 'Automatic Stabilizers,'" *Journal of Finance*, Vol. XI (December, 1956).

4. For example, I cannot take seriously the thesis that the Independent Treasury System coupled with import duties was conceived of as an automatic stabilizer, even though modern analysis would so treat import duties regardless of monetary adjustments. Kenyon Poole first advanced this thesis in "Background and Scope of American Fiscal Policies," published in a book he edited, *Fiscal Policies and the American Economy* (New York: Prentice-Hall, Inc., 1951), and it has been elaborated by Paul B. Trescott, "The Idea of 'Built-In Flexibility'—1837–1860," *Public Finance*, Vol. XI, No. 4 (1956).

5. Three major ommissions are (1) Henry Hilgard Villard, *Deficit Spending and National Income* (New York: Farrar & Rinehart, Inc., 1941), who wrote: "To the extent that this general analysis is accepted, taxes with an unstable rather than a stable yield become desirable and our criterion of a proper tax structure may alter accordingly" (p. 370 n.); (2) Arthur Smithies, "The Behavior of Money National Income under Inflationary Conditions," *Quarterly Journal of Economics*, Vol. LVII (November, 1942), reprinted in American Economic Association, *Readings in Fiscal Policy* (Homewood: Richard D. Irwin, Inc., 1955), who showed that proportional taxation would not automatically reduce an inflationary gap; (3) Richard A. Musgrave, "Federal Tax Reform," *Public Finance and Full Employment* ("Postwar Economic Studies," No. 3 [Washington: Board of Governors of the Federal Reserve System, December, 1945]), who had computations of income elasticities of tax yields and who placed what appeared to be, in terms of his later views, excessive weight on automatic yield response as a policy criterion. (Mention might also be made of an old paper by Jacob Viner, "Taxation and Changes in the Price Level," *Journal of Political Economy*, Vol. XXI [August, 1923], which explores the relationship between real tax yields and price changes, but from an equity point of view.)

earlier writers were near this view,[6] Samuelson in 1951 is most clearly responsible for its full recognition.[7] Soon thereafter the econometric and theoretic model-building in government work led to general cognizance of the proper role of taxation in income analysis. Many could be named as leading contributors to the analysis now known as the "balanced-budget theorem,"[8] but apparently Galting deserves primacy for the proper initial formulation[9] that culminated in the famous paper of Haavelmo.[10] While the balanced-budget theorem can by no means be considered the final work on the subject (and indeed was not so construed by contributors to its development)[11] its formulation marked the basic integration of taxes into income analysis.[12]

The theory was at hand with which to rationalize policy. This task was undertaken primarily by the group of economists surrounding the Committee for Economic Development—Ruml, Hart, and Stein —and resulted in the production in 1947 of the important report, *Taxes and the Budget*.[13] The view there enunciated that a *given* fiscal-monetary structure could damp down, but not reverse, economic fluctuations became widely accepted. Some device automatically changing the fiscal-monetary structure in the proper direction was required, it was believed, for reversal to take place. And this finding led to emphasis on automatic techniques that would shift this struc-

6. Gerhard Colm and Fritz Lehmann, "Public Spending and Recovery in the United States," *Social Research*, Vol. III (May, 1936), reprinted in Colm, *Essays in Public Finance and Fiscal Policy* (New York: Oxford University Press, 1955), were groping for the proper concept in their distinction between a maintenance budget and an expansive one.

7. Paul A. Samuelson, "Fiscal Policy and Income Determination," *Quarterly Journal of Economics*, Vol. LVI (August, 1942).

8. See William A. Salant, "Taxes, Income Determination, and the Balanced-Budget Theorem," *Review of Economics and Statistics*, Vol. XXXIX (May, 1957).

9. P. Nørregaard Rasmussen, "A Note on the History of the Balanced-Budget Multiplier," *Economic Journal*, Vol. LXVIII (March, 1958), cites his contribution as J. Gelting, "Nogle bemaerkninger om financieringen af offentlig virksomhed," *National-økonomisk Tidsskrift*, Vol. LXXIX (1941).

10. Trygve Haavelmo, "Multiplier Effects of a Balanced Budget," *Econometrica*, Vol. XIII (October, 1945), reprinted in American Economic Association, *Readings in Fiscal Policy*.

11. For later developments see Salant, *op. cit.*

12. Salant (*ibid.*) also takes this view in contrast to that, say, of W. J. Baumol and M. H. Peston, "More on the Multiplier Effects of a Balanced Budget," *American Economic Review*, Vol. XLV (March, 1955), who seem to regard it as a policy pronouncement.

13. This report was clearly foreshadowed in the earlier study of this group (Melvin de Chazeau and others, *Jobs and Markets* [New York: McGraw-Hill Book Co., 1946]).

ture when excess demand or supply arose. While an old idea,[14] it was popularized by the National Planning Association Conference of University Economists in 1949.[15] The other reaction was that of Friedman, who, in 1948, showed that, under certain implausible assumptions (primarily flexible wages and prices), a given fiscal-monetary structure not only would damp down fluctuations but would also move the system toward equilibrium through its Pigou effects.[16] This was the theoretical capstone to automatic stabilization theory.

III. Institutional Changes Making Automatic Fiscal Stabilizers More Important

Despite these developments in fiscal theory, the weight of economic opinion still seemed to favor discretionary policy over automaticity. What, then, were the institutional developments that made increased reliance on automatic stabilizers more appealing?

1. Since the strength of automatic fiscal stabilizers varies directly with the height of the marginal tax (less transfer) structure, the large tax yields made necessary by heavy governmental expenditures in the postwar world made greater automatic stability possible.[17] A change in the economic structure had increased the potential effectiveness and thus the appeal of automaticity.

2. This structural change—the increase in the size of tax yields—raised the potential importance of automatic policies, without, however, decreasing the significance of discretionary stabilization policies. The second significant change—forecasting failures—did weaken the reliance that could be placed on discretionary stabilization policies. Given the institutional fiscal arrangements in the United

14. For example, the U.S. Treasury proposed in 1942 that income tax withholding rates depend on the Federal Reserve Board index of production. The British White Paper on Employment Policy of 1944 also contains proposals for varying contributions for unemployment compensation.

15. Reprinted in *Readings in Fiscal Policy*.

16. Milton Friedman, "A Monetary and Fiscal Framework for Economic Stability," *American Economic Review*, Vol. XXXVIII (June, 1948), reprinted in American Economic Association, *Readings in Monetary Theory* (Philadelphia: Blakiston Co., 1951).

17. We still occasionally see the statement, incorrect analytically, that the mere increase in size of government expenditure adds to economic stability. Such would be true if the expenditures undertaken by the government displaced private expenditures of greater sensitivity to income change. An example might be government ownership of transportation coupled with greater stability of investment activity after the change. Or, if the added government program reduced the possibility of shifts in the demand schedule by shrinking a sector where autonomous shifts were more likely to arise, greater stability would ensue. But if the added expenditures simply add autonomously to existing total demand, any change in the slope of the spendings schedule, on which automatic stability rests, must depend on the method of finance, not on the expenditure program.

States, under which large amounts of time are taken in formulating and adopting policies when economic conditions change, successful discretionary policies require an ability to forecast. During World War II, econometrics had given important insight into mobilization problems, and many held out the same hope for it in the postwar period. It was a time of easy optimism that reached its apogee in the initial bills leading to the Employment Act of 1946. On the basis of generally agreed postwar forecasts, demand was expected to weaken in 1946 following the sharp reduction in government purchases of goods and services to such an extent that fiscal means would be required to shore it up. As things turned out, the fiscal steps taken in 1945 based on the incorrect forecasts were seriously wrong. The failure of forecasting sharply reduced the effectiveness of discretionary policies and further improved the prospects of automatic ones.

3. But even these events did not create any stampede toward automatic devices. The third significant change was the final recognition that the major postwar economic problem was not that of raising the sunken hulk of the economy but rather that of keeping it on a fairly even keel. Obviously, if an economy could near full employment only by continual heavy doses of effective demand, it would hardly be wise to increase the dosage required by reducing induced demand and the multiplier. But if an economy appeared able to keep itself tolerably near some acceptable level of employment, the wisdom of reducing the effects of shocks on it—in either an upward or a downward direction—seemed more sensible. The three good years, 1946–48, undoubtedly decreased the number of economists who thought that stagnation was just around the corner. But it was probably the recession of 1949 that was more decisive. Only minimal effective fiscal action was taken in this recession; yet the economy righted itself. Automatic stabilizers rather won their spurs here, and the shifts in professional opinion were mirrored in shifts in the attitude of the government.

IV. The Acceptance of Automatic Fiscal Stabilizers as Part of Government Policy

Appraisal of the extent of governmental reliance on particular policies is necessarily a matter of doubt. All policy is composed of many complicated strands, none of which is given a precise weighting; nor are the weights aired in public. To some notions mere lip service is paid, and genuine motivation is masked. Moreover, a government is a many-voiced body. Not only can the views of the legislature differ from that of the executive, but within each body sharp differences of

opinion can be found. This makes judgments about these matters necessarily arbitrary and precarious.

In the following, primary reliance has been placed on the President's Economic Reports as mirroring administrative views. The Budget messages, oddly enough, contain no reference to this subject, and the State of the Union message is devoted more to particular legislative programs. On the congressional side, only formal committee or subcommittee documents have been considered as policy statements.

A. EXECUTIVE BRANCH

1. *Truman administration.*—The Truman administration in its early years was preoccupied with the problems of inflation. It dealt with them primarily by discretionary policies and gave recognition to the importance of automatic or built-in stabilizers only slowly. Any emphasis given to fiscal flexibility had reference to discretionary, not automatic, responses. In 1948 we find the administration saying:

> *Tax policy* for the long run should have . . . a tax structure which will promote stabilized prosperity through adjustment of particular taxes to stimulate or to check consumer expenditure or business expenditure as circumstances require.[18]

And again in 1949:

> The national tax policy should be flexible and should be promptly adjusted to the changing needs of business and consumers in the course of evolving economic events.[19]

First recognition of automaticity appears in 1949. The Council of Economic Advisers, in reviewing the shock resistance of the economy to recession, found that

> [t]he economy today is in much better position to withstand shock than in the twenties. . . . The so-called "built-in flexibilities," such as the social security system, veteran's programs, and the farm price-support program would all have a cushioning effect in case of a downswing. In general, large Government budgets make an economy more resistant to shock, and on the revenue side the progressive income tax increases flexibility.[20]

It is revealing to note the tax and expenditure factors[21] on which

18. *Economic Report of the President,* January, 1948, p. 10.

19. *Economic Report of the President,* January, 1949, p. 10.

20. Council of Economic Advisers, "Annual Economic Review," *Economic Report of the President,* January, 1949, p. 74. Note the reference to the reduction of instability through mere budget size.

21. Many monetary and debt factors are also mentioned, but this paper is limited narrowly to fiscal policy.

stability is presumed to rest and the order of their importance. The item coming last is the progressive income tax, and, perhaps significantly, it is not mentioned in the 1950 report.[22]

The lowest score that fiscal policy received from the council was in their report to the President at the end of 1949. They took the view that compensatory action in the 1930's showed that fiscal policy was inadequate to cope with cyclical fluctuation:

> The reason for this was not simply that the "compensatory" action was not big enough. The fact was—and still is—that the range of useful projects susceptible to undertaking by government cannot be sufficiently voluminous to counteract fully a general depression—even when coupled with tax reduction.[23]

Before peacetime stabilization policies could be worked out more fully, the Korean War intervened, and the fiscal problems it posed were of a considerably different type. Furthermore, a change in administration was made in 1953. In the last reports of the Truman administration a heavier emphasis was given to automatic stabilizers as important parts of economic policy. In reviewing the recovery from the 1949 recession, the council attributed a significant role to them.[24] And the administration's swan song in January, 1953, contained elaborate statements on this aspect of fiscal policy. The President stated:

> During recent weeks a variety of commentators far and wide have noted the profoundly protective and stabilizing elements which have been built into our economic system during the past quarter century. There is now a rather prevalent view that the danger of any economic setback getting out of hand during the next few years is minimized.[25]

He then goes on to point them out: better income distribution, progressive taxation, high expenditures, unemployment compensation, farm supports, firmer wage rates, less unstable financial markets, and more enlightened business practices.[26] The council, in its turn,

22. Council of Economic Advisers, "Annual Economic Review," *Economic Report of the President,* January, 1950, pp. 68–69.

23. Council of Economic Advisers, "Business and Government: Fourth Annual Report to the President," December, 1949, p. 12. Detailed comment is unnecessary. This position is backward even for 1949. A quantitative appraisal of their view can be found in the writer's "Fiscal Policy in the Thirties: A Reappraisal," *American Economic Review,* Vol. XLVI (September, 1957).

24. At first, the role of automatic stabilizers was minimized (see Council of Economic Advisers, "The Annual Review," *Economic Report of the President,* January, 1950, pp. 59–62, 103–6). Then some recognition was granted in the midyear 1950 "Economic Review" (p. 36). Finally, their midyear 1952 "Economic Review" had a full discussion, with high credit given to built-in fiscal stabilizers for the 1949 recovery.

25. *Economic Report of the President,* January, 1953, p. 7.

26. One might, of course, quarrel with some of these items, such as income distribution and large government expenditures.

speaks of these factors as "commonplaces of public policy"[27] and then goes on to assert that, while important, "it would be easy to rely on them too heavily. . . . [T]hey are not essentially recession-preventing or recession-reversing forces. . . . Thus, our new institutional safeguards are no substitute for positive anti-deflation policy."[28]

2. *Eisenhower administration.*—Broadly speaking, the Eisenhower administration took approximately the same view toward automatic stabilizers as did the previous one. Its general emphasis on discretionary fiscal policies can be gained from the following statement:

> But automatic stabilizers cannot be counted on to do more than restrain either an upward or a downward tendency of the economy. In view of their limitations, and because of the impossibility of being entirely sure in advance of the precise effect of any governmental program, the Government will pursue flexible policies in the future as it has in the past year.[29]

Yet, despite this strong statement of their limitations, the administration seemed somewhat more receptive to automatic stabilizers and, in some respects, showed a better understanding of them than did the preceding administration. Note the recommendations they made in 1954 for increasing economic stability through strengthened automatic stabilizers: placing the payment of corporate income taxes on a more current basis, speeding up refunds of overpaid taxes (such as in withholding), increasing the business-loss carry-back from one to two years,[30] and a strengthening of the social security system. Again in 1956 they recommended "extending the automatic workings of our fiscal system that tend to offset or cushion changes in income."[31] Concretely, it was to be achieved through further improvement in unemployment compensation, an activity conducted by the states.[32]

The improvement in understanding of the Eisenhower over the Truman administration is exhibited in the recognition of more techniques to improve automaticity and especially in the stabilization role that tax payments, as opposed to tax liabilities, may play.[33] Nevertheless, the President's Economic Reports in this period have

27. Council of Economic Advisers, "The Annual Economic Review," *Economic Report of the President*, p. 105.

28. *Ibid.*, p. 106.

29. *Economic Report of the President*, January, 1954, pp. 112–13.

30. *Ibid.*, p. 81.

31. *Economic Report of the President*, January, 1956, p. iv.

32. *Ibid.*, p. 93.

33. Under dynamic conditions, the timing of tax collections may be more important to stability than the height of tax rates.

one serious weakness in the fiscal field. While taking full credit for fiscal and other steps that increased automatic stability, they fail to point out that the net result of all the fiscal steps recommended and enacted in the period 1953–56 was to *decrease* automatic stability. The recommendations to which they point, such as the extension of the loss carryback to two years, are of trivial quantitative importance in economic stabilization. The rate reductions that were recommended—in the excess profits tax and in the personal income tax—were, on the other hand, of major quantitative significance, and this fact goes unmentioned. We must credit this omission either to lack of understanding or to lack of candor.[34]

B. LEGISLATIVE BRANCH

The development of an attitude toward automatic fiscal stabilizers in Congress was much the same as in the administration. After postwar inflationary dangers had slackened, the Joint Committee on the Economic Report (now the Joint Economic Committee) created a Subcommittee on Monetary, Credit, and Fiscal Policies under the chairmanship of Senator Douglas. The report of the subcommittee in 1950 contained the following recommendations, among others:

1. A policy that will contribute to stability must produce a surplus of revenues over expenditures in periods of high prosperity and comparatively full employment and a surplus of expenditures over revenues in periods of deflation and abnormally high unemployment. Such a policy must, however, be based on a recognition that there are limits to the effectiveness of fiscal policy because economic forecasting is highly imperfect at present and tax and expenditure procedures are very inflexible.

2. We recommend that the Joint Committee on the Economic Report make an intensive study of the various possible methods of increasing the flexibility of

34. The Democratic members of the Joint Committee on the Economic Report criticized the administration for claiming an expansion in automatic stabilizers: "The administration's claim that it extended the automatic countercyclical workings of the fiscal system is grossly exaggerated. It is true that some improvements were made in the various State unemployment insurance systems. These are welcome. But the major needed improvements—increasing the amount and duration of weekly benefits—have not been energetically promoted by the administration.

"The Revenue Act of 1954 made only one improvement in the countercyclical flexibility of the revenue structure. This was the extension of the carryback of net operating losses from 1 to 2 years. Since assuming office, however, the present administration has made no major proposal for increasing the built-in flexibility of our tax system. As the report of this committee's Subcommittee on Tax Policy, headed by Representative Wilbur D. Mills, pointed out, the primary requirement in this connection is restoration of the eroded individual and corporate income-tax bases and greater effective progression in the individual income tax. The administration has offered no constructive proposals in these areas" (Joint Committee on the Economic Report, *Report on the January, 1956, Economic Report* [84th Cong., 2d sess.], Senate Report No. 1606 [March 1, 1956], p. 31).

tax and expenditure policies in order to discover whether and to what extent it is feasible to make these instruments more effective for stabilization purposes.[35]

A subcommittee on tax policy was later appointed under the chairmanship of Representative Wilbur Mills. It held hearings in 1955 on tax policy for economic growth and stability and reported to the Joint Committee on the Economic Report, which, in turn, adopted the report.[36] The four major principles of tax policy emphasized in the report were (1) proper budget surpluses and deficits to achieve economic stability; (2) improvement in built-in stabilizers; (3) encouragement of balanced growth and efficient resource use; and (4) encouragement to small and new businesses.

This emphasis on the need for improvement in built-in stabilizers in federal tax policy stemmed from the committee's belief that state and local governments would undertake a larger proportion of governmental activity in the future than in the past. Since these governments depend on less sensitive sources for their revenues, such a shift in proportions, they thought, would reduce the total fiscal response of government budgets unless the response of the federal government was enhanced.

The section of the report that analyzed automatic fiscal stabilizers is the most detailed of any public discussion. To achieve more automatic stability, the committee recommended that major emphasis be given to strengthening personal and corporate income taxes by bringing in exempt items of income that are highly responsive to income,[37] dividing up the first bracket under the personal income tax, eliminating the advantage married people have in income splitting, and further graduation of the tax on small corporations. This latter recommendation, however, though helpful to small corporations, would doubtless decrease tax sensitivity.[38] Income of small corporations fluctuates more than that of the large. Hence reducing the rate of tax on this more volatile portion of corporate income would slightly reduce automatic stability.

35. U.S. Joint Committee on the Economic Report, *Monetary, Credit, and Fiscal Policies: Report of the Subcommittee on Monetary, Credit, and Fiscal Policies* (81st Cong., 2d sess.), Senate Document No. 129 (January 23, 1950), pp. 11–12.

36. U.S. Joint Committee on the Economic Report, *Federal Tax Policy for Economic Growth and Stability* (84th Cong., 2d sess.), Senate Report No. 1310 (January 5, 1956).

37. Fuller taxation of capital gains and losses is implied, but not mentioned explicitly.

38. The committee perhaps relied on the authority of Goode in reaching their decision. He wrote: "Further graduation of the corporation income tax according to the absolute size of net income or the rate of return on invested capital would increase built-in flexibility" (Richard Goode, "The Corporate Income Tax in a Depression," in Universities–National Bureau Committee for Economic Research, *Policies To Combat Depression* [Princeton, N.J.: Princeton University Press, 1956], p. 158).

The views of the committee are certainly advanced, both in their emphasis on automatic stability and in the proposals to implement it.[39] But one must bear in mind that the committee does not have control over specific legislation. Government expenditures ordinarily channel through the Appropriations Committees of the House and Senate, and tax changes through the Ways and Means Committee in the House and the Finance Committee in the Senate. The committee's influence on policy depends primarily on the attention given its reports and on the personal influence of the membership. In the past its reports have often commanded wide discussion, and its members have been important legislators. Its chairmen have included Senators Taft, O'Mahoney, and Douglas, and Representatives Mills, Patman, and Walcott, and many of its members have positions on the financial committees of Congress.

Despite the views of the Joint Economic Committee, however, none of the congressional *financial* committees has taken a position on the merits or demerits of automatic stabilizers. In this respect the legislature seems to be much like the executive branch of the government. Those directly connected with tax and fiscal policy in both branches maintain largely a discreet silence in this area. But in its understanding of the problems of automatic stabilization, the committee seems entirely abreast of the executive in its thinking.[40]

V. Conclusion

This review of the development of government policy on automatic fiscal stabilizers shows the slow pace with which they were recognized. Only after an adequate theory had been developed and after discretionary policies had failed, were they in a position to make such progress. They began to receive increasing attention following their successes in the recessions of 1948–49 and 1953–54.

39. Yet note the statement of Senator Douglas in his supplemental views on the 1957 Economic Report of the President: "It is necessary to warn against a blind optimism that all of our major economic problems have been solved, that 'built-in' stabilizers can 'automatically' prevent maladjustments from becoming acute, and that cyclical problems are not only historical." He points out that price inflation has reduced the contribution to stability of social security, loopholes that of the income tax, and regressiveness that of federal excises and state and local taxes (U.S. Joint Economic Committee, *1957 Joint Economic Report* [85th Cong., 1st sess.], House Report No. 175 [February 28, 1957], p. 16).

40. The Secretary of the Treasury's deputy for tax policy, Dan T. Smith, has stated in an address to the National Tax Association: "A conclusion—if there is one—to these remarks might be that a policy of tampering with the tax laws to secure desired short-run effects, even if possible to adopt, would be likely to be ineffective and might be positively harmful from the standpoint of other objectives of tax policy" ("Inflation's Effect on Tax Policy," *1957 Proceedings of the National Tax Association*, p. 358).

The administration and the Congress have both given vocal support to built-in stabilizers. This support may, of course, be mere lip service. In nearly every case the policies espoused to implement automatic stability have been desired on other grounds, and some policies held out as implementing actually do not. There has been as yet no clear-cut test in which a particular policy may be desirable from the point of view of stability but be "inequitable" or adversely affect the supply of output.

In the present state of economic knowledge, however, this is probably as it should be. It is possible on the basis of existing theory to make general, gross statements regarding the effects of alternative fiscal policies on automatic stability. But the next stage requires considerably greater precision of analysis. To assist a policy-maker, it is necessary not only to know the direction but also how much given policies enhance or reduce stability. We must push ahead with the slow accumulation of quantitative analysis for further progress in this field. It will then be possible to sharpen policy positions and improve fiscal performance.

PORTFOLIO OPERATIONS OF COMMERCIAL BANKS AND THE LEVEL OF TREASURY SECURITY PRICES

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NOT ONLY WERE commercial banks the largest and most active investor-traders in the Treasury securities market after 1945, but their holdings of Treasury securities fluctuated widely relative to those of other investors. Further, it appears that oscillations in bank holdings of Treasury securities go far toward determining their price-yield movements. Reversing prewar experience and the putatively normal pattern of yield relationships between Treasury and corporate securities, yields on Treasury securities rose and fell over a wider range, for the most part, than did yields on corporate securities. The instability of yields of Treasury securities in the postwar year calls for a re-examination of traditional notions concerning Treasury securities and a re-evaluation of the role of commercial banks in the Treasury securities market.

I. PORTFOLIO OPERATIONS OF COMMERCIAL BANKS IN TREASURY SECURITIES MARKET, AN OVER-ALL VIEW

MARKET YIELDS OF TREASURY SECURITIES, LOAN AND INVESTMENT OPERATIONS OF COMMERCIAL BANKS, AND BUSINESS ACTIVITY

The roller-coaster pattern of commercial bank holdings of Treasury securities appears to be related to changes in the level of business activity and related changes in the volume of bank loans. Thus a close connection is manifest between downturns in general business activity and expansion of Treasury security holdings of commercial banks. Similarly, during periods of mounting business activity, commercial banks generally reduced their holdings of Treasury securities.

During the recession of 1949 commercial banks were the *only* net buyers of marketable Treasury securities, and in the 1953–54 recession they were, by all odds, the major net buyers. For both periods their holdings rose when expressed as a percentage of the total supply of marketable Treasury debt outstanding (Table 1). Accord-

* The article was prepared by the author while he was an instructor in finance at the University of Pennsylvania.

ing to present indications, the same kind of behavior seems likely to characterize the recession of late 1957–58.

There were four periods of mounting business activity after 1945, characterized by rising production and loan volume; and it was during these upswings that commercial banks stood, by far, as the biggest net sellers of Treasury securities. These periods were: (1) January, 1946, to March, 1949; (2) January, 1950, to May, 1951; (3)

TABLE 1*

COMMERCIAL BANK HOLDINGS OF MARKETABLE U.S. TREASURY SECURITIES IN RELATION TO TOTAL HOLDINGS

Time Period†		Par Value of Total U.S. Treasury Securities Outstanding (Billions of Dollars)	Par Value of U.S. Treasury Securities Held by Commercial Banks (Billions of Dollars)	Commercial Bank Holdings as Percentage of Total
(S1)	January, 1946	199.6	92.0	46
	March, 1949	155.6	60.6	39
(B1)	March, 1949	155.6	60.6	39
	October, 1949	155.4	67.4	43
(S2)	October, 1949	155.4	67.4	43
	June, 1951	150.3	58.4	39
(S3)	November, 1952	161.2	64.2	40
	May, 1953	160.7	58.5	36
(B2)	May, 1953	160.7	58.5	36
	November, 1954	170.0	69.2	41
(S4)	November, 1954	170.0	69.2	41
	October, 1957	162.2	57.3	35

* Source: Absolute data from *Federal Reserve Bulletin*.

† Symbols refer to periods when commercial banks bought (B) or sold (S) Treasury securities in largest amounts.

November, 1952, to June, 1953; and (4) November, 1954, to October, 1957. Over these periods, Treasury securities held by commercial banks declined as a percentage of the total supply of marketable federal debt outstanding (Table 1). It is also significant that prices of Treasury securities fell most rapidly, as well as by the largest amounts, when commercial banks reduced their holdings in largest amounts; prices rose most rapidly during those periods when commercial banks bought in largest amounts.

The positive association between Treasury security holdings of commercial banks and the prices of these securities suggests that commercial banks exercised a significant—often dominant—influence on the market for Treasury securities. Apart from the Federal Reserve authorities (whose holdings of marketable Treasury securities fluctuated over a narrow range relative to the holdings of commercial banks), other investors played a relatively passive role. The holdings

of insurance companies, mutual savings banks, and United States government investment accounts also moved over a narrow range compared to the holdings of commercial banks. The holdings of "others" (principally individuals and non-financial business corporations as reported in the Treasury survey data) failed to evidence the contracyclical pattern of commercial bank holdings.

RELATION OF FEDERAL RESERVE POLICY TO THE PORTFOLIO OPERATIONS OF COMMERCIAL BANKS IN TREASURY SECURITIES

The impact of Federal Reserve policy on the Treasury security holdings of commercial banks and the related impact on the market prices of these securities may be observed in the period between April 30, 1949, and August 31, 1949. Legal reserve requirements were reduced five times for the Reserve city banks and four times each for the central Reserve city and country banks. The intention of the Federal Reserve authorities was to combat the deflationary pressures of that period by providing the commercial banks with additional lending capacity. Over this period as a whole, however, loans failed to rise; commercial banks bought Treasury securities instead. They bid the prices of Treasury securities so high that the Federal Reserve authorities found it advisable to engage in offsetting open-market sales. This explains the anomaly of $5 billion of Treasury security sales by the open-market committee in the recession year of 1949. These sales, according to the chairman of the Board of Governors of the Federal Reserve System, were "neither restrictive nor expansionary" but were deliberately designed to keep prices of Treasury securities from rising any higher in response to the heavy purchases of commercial banks.[1]

Loan volume responded weakly to the reduction in legal reserve requirements put into effect in the 1953–54 recession, but commercial banks promptly bought billions of dollars of Treasury securities while prices, as noted, rose sharply. The reductions in legal reserve requirements put into effect in the early months of 1958 permitted banks to repay their indebtedness to the Federal Reserve banks and add even further to their holdings of Treasury securities. Again, loan demand remained weak while prices of Treasury securities continued to rise.

By way of contrast, in 1955 and 1956 and in several other periods of business expansion in the postwar years during which the Federal

1. United States Congress, Joint Committee on the Economic Report, *Monetary Policy and the Management of the Public Debt: Replies to Questions and Other Materials for the Use of the Subcommittee on General Credit Control and Debt Management* (82d Cong., 2d sess.), Part I, p. 226.

Reserve exercised credit restraint, the commercial banks found it desirable to sell Treasury securities in order to expand their loans. The concerted selling appeared to be one of the strongest forces making for a rapid fall in prices of Treasury securities in these periods.

The commercical banks acted in unison—that is, individual banks generally sold Treasury securities at the same time in response to an increase in loan volume, and they ordinarily bought Treasury securities at the same time as an offset to a decline in loan volume.[2] This concerted behavior, coupled with the natural tendency for commercial banks to buy and sell Treasury securities in large volume, is the basis for what has been described as the "inherent instability" of the Treasury securities market.[3] It is this behavior which seems to have contributed to the wide degree of fluctuation in the prices of Treasury securities in the postwar years.

The magnitude of the fluctuations in prices of Treasury securities is not, of course, to be considered a new phenomenon, for the United States experienced fluctuations of similar magnitude in the 1920's and the 1930's and in other periods as well. What does seem to be new is that these price movements did not coincide with serious financial panics, booms and busts, or all-out war. On the contrary, the

2. For empirical support of this conclusion see Robert H. Parks, *Portfolio Operations of Commercial Banks in the U.S. Treasury Securities Market* (unpublished doctoral diss., University of Pennsylvania, 1958), chap. v.

3. Dr. Charles R. Whittlesey, professor of finance and economics at the University of Pennsylvania, first suggested that the Treasury securities market might be inherently unstable in an unpublished manuscript written in 1949: "Federal Reserve Policy, 1945–1949," p. 14. See also Charles R. Whittlesey, *Principles and Practices of Money and Banking* (rev. ed., 1954), p. 298, and "Central Bank Policy in the Light of Recent American Experience," *Weltwirtschaftliches Archiv*, LXXVIII, 41.

The notion that commercial banks made for greater market instability in the securities in which they trade is further supported by a comparison of the price movements of eligible versus bank-restricted Treasury bonds. An examination of the price history of the bank-restricted 2½'s of June, 1967–72, the bank-restricted 2½'s of September, 1967–72, and the bank elegible 2½'s of September, 1967–72, serves ideally for the purpose of making such a comparison. The first two bank-restricted issues have identical price histories, but the eligible bonds, up until 1953, sold at substantial premiums over these bank-restricted issues. Further, the eligible bonds generally fluctuated over a wider range than did the bank-restricted bonds. Starting with 1953, the price (yield) differentials disappeared entirely, and the eligible and ineligible issues evidenced thereafter virtually identical price histories. Th reason for the gradual narrowing of the premiums in 1952 and the disappearance in 1953 was probably attributable to anticipations that the ineligible issues would soon be declared eligible under the tight-money conditions which developed in the first half of 1953. The Treasury did, in fact, declare all issues eligible by December, 1955.

The fact that yields on special bills fluctuated violently adds even further support to the notion that what banks touch becomes unstable. For an analysis of commercial bank operations in special Treasury bills, together with other factors (especially the special tax position of commercial banks), which appear to make for greater instability in the Treasury securities market, see Parks, *op. cit.*, chap. vii and Appendix B.

wide fluctuations in prices were responsive to relatively mild fluctuations in the level of production and employment.

II. Commercial Bank Operations and Level and Structure of Prices and Yields on Treasury Securities

Changes in Structure of Yields on Treasury Securities in Relation to Business Fluctuations

Over the postwar years, yields on Treasury securities generally rose, and yield spreads narrowed (between longer- and shorter-term maturities) in those instances when commercial banks sold substantial amounts of Treasury securities, especially the shorter-term issues. These sales were concentrated in periods of business expansion. Yields generally fell, and spreads widened in those periods when banks bought Treasury securities in large amounts, especially the shorter-term issues. These purchases were concentrated in periods of business contraction.

Theory of Changes in Structure of Yields

A strong case can be made for the view that changes in the structure of yields described above were a result of a combination of expectations, on the one hand, and institutional factors, on the other.

Role of expectations.—When the level of yields is considered to be low and expectations are that yields will rise, bankers and other investors may prefer to buy shorter-term debt contracts, thereby forcing short-term yields appreciably below long-term yields. By holding short-term relatively liquid issues, they hope to avoid substantial capital losses on longer-term issues which would materialize in connection with subsequent advances in long-term rates. The effective supply of lendable funds is directed from long-term securities into short-term securities, thereby accounting for a rate structure in which long-term yields stand above short-term yields.

In a market where the absolute level of yields is deemed to be high and one where expectations are that yields are expected to fall, many investors may prefer to hold long-term debt contracts rather than short-term contracts in the hopes of capital appreciation. As a result, the effective supply of short-term funds may be reduced relative to the supply of long-term funds. and thereby force short-term yields higher, perhaps even above long-term yields.[4]

4. For the first time, in the war and postwar years (the tight-money market of September, 1956) Standard and Poor's yields on long-term Treasury bonds stood below yields on intermediate Treasury bonds, which, in turn, averaged less than yields on short-term Treasury bonds.

Portfolio operations of commercial banks and the structure of yields.—While expectations probably played an important role in bringing about changes in the structure of yields on Treasury securities, institutional factors may have been equally, if not more, important. Emphasis is again placed on the commerical banking system for several reasons. First, by far the largest proportion of the Treasury security portfolio of commercial banks was made up of relatively short-term issues with maturities under five years, and even within this category one-year maturities frequently accounted for over half the total. Second, maturities under five years held by commercial banks accounted for a large proportion of the total outstanding under five years. Third, the largest adjustments made in the Treasury security holdings of commercial banks were made principally by way of operations in these shorter-term issues. Finally, when the commercial banks did bring about substantial changes in short-term holdings, they acted in unison. These operations exerted especially strong pressures on the short end of the market.

PORTFOLIO POLICY AND PRICE FLUCTUATIONS IN TREASURY SECURITIES

Standard and Poor's yields on intermediate Treasury bonds moved over a wider range than did yields on long-term Treasury bonds throughout most of the war and postwar period. Now it is a mathematical truism that for any *given* percentage change in yield, other things being equal, the associated percentage change in price is greater for longer-term rather than for shorter-term debt contracts. It does not follow, of course, that historical prices on long-term debt contracts have fluctuated over a wider range than prices on shorter-term contracts. The reason is that changes in yields on shorter contracts may be enough greater than changes in yields on longer contracts that prices on the former move over a wider range than prices on the latter. With this in mind, the decidedly greater yield instability of the intermediate Treasury bonds as contrasted to long-term bonds suggests that prices of long-term bonds may have moved over a narrower range than prices of intermediate bonds.

Standard and Poor's index of long-term prices of Treasury bonds was, in fact, less volatile than prices of intermediate Treasury bonds from early 1945 through 1951.[5] Expressed alternatively, yield

5. Standard and Poor's security price indexes are based on the median yield to maturity of a varying number of bonds, depending on the issues available. All the indexes of Treasury securities referred to in this study are for the fully taxable issues. The short-term price index is based upon those issues with over three but less than four years to maturity. The price series is a conversion of the yields assuming a 3 per cent coupon

changes on the intermediate issues exceeded yield changes on the long-term issues by enough to more than offset the maturity factor. However, after 1951 the reverse was true, with long-term prices fluctuating more violently than intermediate prices.

By way of hindsight, from 1945 through 1950 the individual commercial banker could have invested in long-term Treasury bonds rather than intermediate Treasury bonds at a substantial income advantage with no sacrifice of price stability. The facts of the case, however, are that the commercial banks invested very much more heavily in the intermediate issues than in the long-term issues.

It is doubtful whether the commercial banks could have enjoyed both improved income and greater price stability if they had, in fact, invested and traded more heavily in the long-term issues than in the intermediate issues. Such operations would probably have affected the market in terms of both income and price stability—probably in the direction of lower yields and greater price instability of the long-term issues relative to the intermediate issues. This is in line with the thesis of this paper, namely, that the prices of any securities in which the commercial banks trade heavily are likely to be more unstable than they otherwise would be.

Commercial banks invested even more heavily in short-term Treasury bonds, and, while the individual bank sacrificed substantial income as compared to the returns on intermediate and long-term bonds, it nevertheless enjoyed very much greater price stability, at least until mid-1953. In the 1953–54 recession, the short-term index of prices fell almost as much as the long-term index.

The substantial fluctuations in prices of long-term and intermediate Treasury bonds from 1945 through 1951 should dispel the notion sometimes advanced that Treasury bond prices were rigid or inflexible during the period of Federal Reserve par support or that Treasury bonds necessarily afforded 100 per cent liquidity, in the sense that they could be sold at any time without loss to the central bank or on the open market. True, they could be sold above par but not necessarily above purchase price.[6]

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bond with three and one-half years to maturity. The intermediate price index is based upon issues over six but less than nine years to maturity. The price series is a conversion of the yields assuming a 3 per cent coupon bond with seven and one-half years to maturity. The long-term price index embraces issues over ten years to maturity. The price series is a conversion of a 3 per cent bond with fifteen years to maturity (see *Standard and Poor's Security Price Index Record, Trade and Securities Statistics* [1957]).

6. The support program which established price floors below which Treasury security prices were not permitted to fall did not entail maintenance of price ceilings (or yield floors). This left plenty of room, therefore, for volatile movements in prices above the floors (volatile movements in yields below the ceilings) (see n. 9 and related text).

III. Portfolio Operations of Commercial Banks and Market Behavior of Treasury and Corporate Bonds

Comparison of Fluctuations in Yields on Corporate and Treasury Bonds

Over most of the postwar period, including the period of par support, Standard and Poor's yields on long-term Treasury bonds moved over a wider range than did yields on long-term corporate bonds, whether measured in absolute or percentage terms.

In the recessions of 1949, 1953–54, and the fourth quarter of 1957 the magnitude of the decline in yields on corporate and Treasury bonds appeared to be inversely related to the degree of credit risk on these bonds. Yields on long-term Treasury bonds declined more than yields on corporate A1+ bonds, while yields on the poorest-grade corporate bonds (corporate B1+) declined the least. If the low points of the 1949 and 1953–54 recession periods are related to the succeeding highs, yields on Treasury bonds rose more than yields on corporate A1+ bonds which, in turn, rose more than yields on corporate B1+ bonds.[7]

Comparative Price Behavior of Treasury and Corporate Bonds

The price relationships of long-term corporate and Treasury bonds over the postwar years is unprecedented—at least for so long a period of time. The corporate B1+ issues afforded the investor the greatest degree of price stability over most of the postwar period, a surprising reversal of prewar experience. While Standard and Poor's does not prepare a price index for the corporate B1+ issues, the fact that fluctuations in yields on corporate B1+ issues were appreciably less than fluctuations in yields on corporate A1+ issues of roughly equivalent maturities means that prices of the low-grade

7. By way of illustration, from December, 1949, to June, 1953, yields on corporate A1+ bonds rose eighty-three basis points or by 32 per cent, while yields on long-term Treasury bonds rose ninety-five basis points or by 44 per cent. From the highs of June, 1953, to the lows of August, 1954, yields on corporate A1+ bonds fell fifty-six basis points or by 21 per cent. From these lows to the highs of September, 1956, yields on corporate A1+ bonds rose seventy-six basis points or by 27 per cent, while yields on Treasury bonds rose seventy-seven basis points or by 31 per cent.

The highs and lows of the corporate B1+ issues did not coincide with these earlier dates, but yields on Treasury bonds generally moved over a wider range than yields on corporate B1+ bonds. The first exception took place in 1951, when yields on corporate B1+ bonds moved up more than yields on Treasury bonds in both absolute and percentage terms. Again, from February to September, 1956, yields on corporate bonds moved up a little more than Treasury bonds. Corporate A1+ bonds, corporate B1+ bonds, and Treasury bonds moved up 17, 16, and 14 per cent, respectively, over this period. With these exceptions, however, it is apparent that Treasury bonds moved over a wider range than did corporate bonds over the postwar period as a whole.

B1+ issues afforded greater stability, on the average, than prices of high-grade A1+ issues. Since prices of Treasury bonds moved over approximately the same percentage ground as prices of corporate A1+ issues,[8] it follows that top-quality Treasury bonds afforded less price stability than did low-quality (B1+) corporate bonds.[9]

YIELD SPREADS BETWEEN TREASURY AND CORPORATE BONDS

Yield spreads between corporate and long-term Treasury bonds narrowed significantly during the postwar period as a whole and averaged very much less than spreads during the war or prewar period. Moody's indexes show that yields on long-term corporate Baa bonds averaged roughly 2–5 per cent in excess of yields on long-term Treasury bonds before World War II; the spread between corporate Aaa bonds and Treasury bonds averaged about 1 per cent. In contrast, by the 1950's the spread between corporate Baa bonds and Treasury bonds had narrowed to average a little over 1 per cent, while the spread between corporate Aaa bonds and Treasury bonds had narrowed to average less than one-half of 1 per cent.

SIGNIFICANCE OF CHANGED PRICE-YIELD RELATIONSHIPS OF TREASURY AND CORPORATE BONDS

In a sense, corporate and Treasury bonds—with the reservations made below—became better substitutes for each other. Treasury bonds, after 1950, did not offer the traditional advantage of capital stability. Corporate bonds did not afford so much of an advantage in terms of income.

The price instability of Treasury bonds would be expected to react adversely on the borrowing ability of the Treasury. Investors are already well aware that Treasury bonds are subject to a purchasing-power risk, a risk of loss in real value associated with general price inflation. The purchasing-power risk coupled with price instability may induce investors to shift to securities which provide greater pro-

8. If the swings from the recession lows to the succeeding highs are compared, prices of long-term A1+ corporate bonds and long-term Treasury bonds moved over roughly the same percentage range. From December, 1949, to June, 1953, prices fell about 11 per cent for each series. From June, 1953, to August, 1954, prices moved up a little over 8 per cent each.

9. The greater instability of Treasury bonds as compared to corporate bonds after 1945 is difficult to reconcile with the statement of one economist that "strictly private markets" afforded "less price certainty" than the supported market for Treasury bonds (see Albert G. Hart, *Money, Debt, and Economic Activity* [New York: Prentice-Hall, 1953], p. 58).

Another economist wrote that "the Federal Government practices price stabilization and even 'pegging' of the outstanding marketable government bonds—the world's most stable security" (see Paul L. Howell, "Competition in the Capital Markets," *Harvard Business Review*, May–June, 1953, p. 92).

tection than that offered by Treasury bonds and, accordingly, works against the desire of the Treasury to lengthen the average maturity of its outstanding marketable debt. Further, to the extent that the Treasury is obliged to refinance with shorter maturities, the effect is to compound the inflationary pressures. It is these factors, then, that make it unacceptable to refer to Treasury bonds as being "risk-free" except in the sense that the dollar amounts of interest and principal contracted for will be repaid. It is these factors which may well cause the Treasury increasing concern over future years.

The significance of these changes in fundamental market relationships must not be misinterpreted. Individual corporate issues were not traded in the wide markets characteristic of Treasury issues. A $5 million trade was not uncommon in Treasury issues. The total outstanding of any one Treasury issue, amounting to billions of dollars, permitted trades in the millions of dollars without appreciable impact on market prices.[10] On the other hand, a $5 million purchase or sale in most individual corporate issues could not be effected without exerting considerable pressure on prices. The large commercial banker, therefore, who may sell millions of dollars of securities on a moment's notice, cannot afford to rely too much on any individual corporate issue.[11]

10. Treasury markets, however, can become exceedingly "thin" under certain circumstances, as reflected by the statement below:

"The climate in bonds, generally, at the close of last week was one of deep gloom. This was characteristic of corporates, municipals, and, in particular Governments. Sellers of modest amounts such as $500,000 or $1 million frequently find they must accept executions via small amounts, such as a couple of hundred thousand or thereabouts at successively lower prices" (quoted from the price-yield sheet of Aubrey G. Lanston & Co., Inc., May 24, 1957).

11. The very large commercial banker might invest and trade more heavily in small amounts of many corporate issues, but such a policy might entail too great a cost burden in terms of the additional portfolio problems involved. The less complex the portfolio, the fewer are the problems entailed in the administration and analysis of that portfolio. The smaller banker, however, might find it to his advantage to invest more heavily in corporates. Of course, in spite of the good credit record of corporates over the postwar years, the credit risk attached to corporate bonds may preclude purchases by commercial banks. Legal restrictions, as well, prohibit acquisition of many of these issues. However, investors interested in income and liquidity might find it worth their while to invest more heavily in corporate bonds rather than marketable Treasury bonds under the assumption that these postwar relationships would maintain themselves over the future. Alternatively, the wide swings in prices of Treasury bonds permit the speculative-minded to make substantial capital gains (or losses) without any assumption of credit risk.

The speculative activity in Treasury bonds issued in June, 1958 (the 2⅝'s and the 3½'s) made investors acutely aware of "money-rate" risks. These issues were purchased on thin margins in expectation of price advances. However, the market fell precipitously in response to a complex of factors, which probably included (1) positive signs of business recovery coupled with fears of inflation, (2) newspaper releases which indicated a move toward credit restraint by the Federal Reserve, and (3) the disturbing conditions in the Middle East.

THEORY OF CHANGED MARKET RELATIONSHIPS BETWEEN TREASURY AND CORPORATE BONDS

The explanation for the greater instability of Treasury bonds relative to corporate bonds after 1945 is to be found in (1) the special tax position of commercial banks in conjunction with their portfolio operations in Treasury bonds and (2) increased investor confidence in corporate bonds.

The confidence factor.—Yields on corporate bonds declined (prices rose) in the 1949 and the 1953–54 recessions. This suggests that confidence remained high in spite of the decline in business activity over these periods. If investors had become appreciably pessimistic with respect to the credit risk attached to corporate bonds, their prices surely would not have risen over these periods. Thus one might argue that the decline in the pure rate of interest more than offset any rise in yields attributable to increased credit risk. In contrast, over the early depression years and the 1937–38 recession, yields on corporate bonds rose. During these earlier periods it would appear that the decline in investor confidence was the major determining factor in the rise in corporate yields.[12]

Reasoning along similar lines, it would seem that changes in the pure rate of interest would affect prices and yields of risky securities far less than prices and yields of riskless securities. This is true because the pure rate of interest represents a smaller component of the total yield on risky securities relative to the total yield on riskless securities. Therefore, in spite of the improvement in "credit risk" on corporate bonds after 1945, wide fluctuations in the pure rate of interest may have affected Treasury bonds more than corporate bonds.

Portfolio operations of commercial banks in relation to their special tax position.—The special tax treatment afforded commercial

12. These notions are further reinforced by observing the direction of movements in yields on corporate Baa bonds in contrast to the direction of movements of yields on Treasury bonds. Over the postwar recessions, both Treasury and corporate bond yields fell; they moved in the same direction. Over the first half of 1932 and over most of 1937 and the first quarter of 1938, yields on corporate Baa bonds continued to rise, while yields on Treasury bonds fell; they moved in opposite directions.

In terms of the magnitude of these changes over the prewar periods, the percentage rise in yields on corporate Baa bonds was very much in excess of the percentage fall in yields on Treasury bonds. Over 1949 the percentage falls in yields on corporate and Treasury bonds were of roughly similar magnitude. However, over the 1953–54 recession, the percentage decline in yields on Treasury bonds was in excess of the decline in yields on both corporate Baa and Aaa bonds. Again, in the recession of late 1957, yields on long-term Treasury bonds fell more than yields on both corporate Baa and Aaa bonds (see *Federal Reserve Chart Book on Financial and Business Statistics,* February, 1958, p. 24, and *Federal Reserve Chart Book on Financial and Business Statistics,* Historical Supplement, September, 1957, pp. 44–45).

banks could also be a factor in accounting for more aggressive net buying and selling operations of commercial banks in Treasury bonds as compared to the operations of non-bank investors in corporate bonds.[13] Unlike other investors, commercial banks (after 1939) could treat losses on bonds, notes, and certificates (in coupon or registered form) as stock-in-trade losses. This meant that losses, short-term or long-term, could be deducted in full from income as ordinary operating expenses. Banks in the 52 per cent bracket sustained only 48 per cent of the loss. Non-bank investors could carry over the losses for future years but could reduce their tax liability only 25 per cent. They had to absorb at least 75 per cent of any losses realized.

When banks sold at long-term capital gains, the very same class of bonds, notes, and certificates could be treated as capital assets. That is, commercial banks were afforded a two-way or double tax option. Not only could they deduct 100 per cent of *all* losses through the stock-in-trade option, but they were obliged to pay only a 25 per cent tax on long-term gains through the capital gains option.

The double tax option probably made banks less hesitant (or more aggressive) traders in Treasury securities than they otherwise would have been in the absence of this option, a factor which contributed to the observed instability in the market values of Treasury securities. They found it profitable to sell (net) Treasury securities at a loss in order to expand their loans as long as the loss (less the tax savings immediately realized on the loss) was made up by higher-yielding loans. Thus sales at losses, paradoxically, were completely consistent with their profit-maximizing objectives.[14] They found it

13. "Swaps," in which commercial banks buy and make equal offsetting sales of Treasury securities, probably do not exert significant pressures on yields, since these operations neither add to nor subtract from the total supply outstanding in the hands of non-bank holders. Banks, nevertheless, engaged very heavily in swaps for tax purposes. For a detailed analysis of these operations see Robert H. Parks, "Income and Tax Aspects of Commercial Bank Portfolio Operations in Treasury Securities," *National Tax Journal*, March, 1958.

14. An editorial appearing in the *American Banker* suggested that "loss-locked" U.S. Treasury securities be afforded some kind of tax exemption. The exemption, according to the *American Banker*, would "unfreeze some or all of the billions of bank assets which cannot be sold because holders are in no position to take the losses present below par prices would entail" (*American Banker*, October 17, 1956, p. 4).

In another issue of the same newspaper (February 19, 1957, p. 3), it was stated that commercial banks ". . . in order to meet the heavy demand for loans, were forced to sell large amounts of Government securities."

Commercial banks, of course, could not be "forced" to sell Treasury securities which were "loss-locked" and, therefore, unsalable. The notion that Treasury securities were "loss-locked" or "locked-in" (as the term sometimes appears) is supposed to describe the reluctance or unwillingness of bankers to sell securities at a loss. Patently, the doctrine that securities were "loss-locked" logically contradicts the assertion that banks were forced to sell their securities.

Neither view is strictly correct. The notion that Treasury securities were loss-locked

profitable to buy (net) Treasury securities for immediate income (usually during recession) with the comforting thought that they might subsequently dispose of the securities at stock-in-trade losses or capital gains if they should find it necessary or desirable to do so. No comparable option was available to non-bank investors in corporate securities.

IV. Summary and Conclusions

Clearly, the most obvious fact about the Treasury security market in the postwar period was the unprecedented instability in the holdings of Treasury securities by commercial banks. The most significant aspect of this instability was the associated instability in the market prices and yields of these securities.[15] Treasury securities grew increasingly unstable after 1945—so much so that market yields on Treasury bonds (1945–57) generally moved over a wider percentage range than did yields on corporate bonds. These facts, together with the natural tendency for commercial banks to buy and sell Treasury securities in concert in response to economic recession and expansion, respectively, led one economist to call the market "inherently unstable."

Of course, many factors accounted for changes in the prices of Treasury securities other than operations of commercial banks. Therefore, it is impossible to demonstrate and naïve even to suggest any simple, unidirectional, causal relationship between the two. It

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is difficult to reconcile with the heavy net liquidation effected over 1955 and 1956 by banks. The notion also neglects to consider the role of expectations of movements in prices of Treasury securities. If expectations were that interest rates were going to rise even higher (prices fall even lower) than the levels which prevailed over 1956, one would hardly expect bankers to treat their securities as being loss-locked.

The idea that commercial banks were forced to sell must not be interpreted literally. They were not forced to sell, any more than they were forced to make loans.

For a critical analysis of the "locking-in" effect see Charles R. Whittlesey, "Monetary Policy and Economic Change," *Review of Economics and Statistics*, February, 1957, pp. 35–37.

15. The inherent instability of the Treasury security market may have replaced the alleged inherent instability of commercial bank credit. According to some economists (especially R. G. Hawtrey), total commercial bank credit (total earning assets) would be expected to fall in time of business contraction and rise in time of business expansion. However descriptive this may have been of commercial banking behavior in the past, it was not descriptive of the period after 1945. Thus in the 1949 recession and again in the 1953–54 recession, total commercial bank credit rose, the reason apparently being that the decline in loan volume over these periods was more than offset by the rise in Treasury security holdings. In several other periods after 1945 when total loans rose, total commercial bank credit actually fell as banks reduced their holdings of Treasury securities by amounts greater than the rise in loans. In other periods (e.g., the second quarter of 1956) a sharp rise in loans was just about offset by a sharp fall in Treasury security holdings with no change in total commercial bank credit. These offsetting or compensating movements in loans and Treasury security holdings could make for greater stability in total earning assets and demand deposits over the business cycle.

seems reasonable to assume that commercial banks affected the market for Treasury securities and, in turn, were affected by that market, and that both commercial banks and the market responded to a host of other forces which might be labeled as "common causes." Actions of the monetary authorities as well as changes in the health of the President of the United States were important determinants, among others, of movements in prices of Treasury securities.

Yet one notes a chain of relationships running from changes in production and loan volume, to changes in Federal Reserve policy, to changes in holdings of Treasury securities by commercial banks, to changes in Treasury security prices—a set of relationships which can help in any attempt to develop an explanation of the major forces at work in this market after 1945.[16] With a rise in the level of economic activity in general and loan demand in particular, any inflationary pressures thereby generated normally induced the Federal Reserve System to exercise credit restraint. Under these circumstances the commercial banks ordinarily sold Treasury securities to establish stock-in-trade losses (which reduced taxable income by the full amount of the loss) and to put their resources into more profitable earnings assets represented by higher-yielding loans. The securities were ordinarily absorbed by investors other than the monetary authorities, for it would have been illogical to expect the latter to buy securities as long as they were principally concerned with exercising credit restraint. The sales, therefore, were partly self-defeating, in that the system of banks could not add to its total legal reserves as long as the securities were acquired by non-bank purchasers, although the excess legal reserves which were freed did permit a loan expansion equal to the amount of the sales. The sales exerted strong pressures on yields of Treasury securities. Since the bulk of the sales was normally concentrated in relatively short-term securities, the pressures applied to the short end of the market were particularly strong. Short-term yields tended to advance more rapidly than did long-term yields, so that yield spreads narrowed.

In the opposite set of circumstances, that is, with a falling level of economic activity and loan demand, the deflationary pressures thereby generated normally induced the Federal Reserve to take steps to bring about increased credit expansion. Reductions in legal reserve requirements provided the commercial banks with additional free reserves which could be employed to purchase Treasury securities.

16. This is not to deny that the Federal Reserve may initiate changes which may react upon commercial banks, which, in turn, may react upon the level of business activity.

Even apart from the action by the Federal Reserve banks, the decline in deposits (resulting from the repayments of loans) freed excess legal reserves, which also served as the basis for the purchase of additional Treasury securities. Assuming that the Federal Reserve were interested in a policy of ease, it would have been contradictory for it to assume the role of a seller unless it did so in order to offset the effects of reductions in legal reserve requirements (as it did in 1949). When the commercial banking system bought from non-bank sellers, it was able to acquire roughly six dollars of Treasury securities for every dollar held in excess legal reserves. Their collective purchases tended to push up Treasury security prices, and, since the commercial banks concentrated on the purchase of shorter-term issues, their yields were put under relatively more pressure than the longer-term issues. Short-term yields tended, therefore, to fall faster than long-term yields, and this widened the spread between the two.

COMMUNICATIONS

COMMENT ON "PUTS AND CALLS: A FACTUAL SURVEY"

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FRANKLIN AND COLBERG are to be commended for their informed primer on the interesting Put and Call option market.[1] The lack of information about this mysterious and complex market in the past has hindered research into the trading activities which take place in it, just as it has tended to limit the extent of option trading. While the factual survey presented by Franklin and Colberg will be an important step in eliminating the uncertainty surrounding Put and Call trading, several of the conclusions they draw from these facts appear questionable.[2] The purpose of this Comment is to discuss these questionable issues without detracting from the basic value of their factual exposition.

1. One of their conclusions is that "the main problem of the Put and Call brokers seems to be that of finding buyers rather than sellers" (p. 34). Previously, the evidence of this was presented: "Most of [the brokers'] advertising is designed to reach the potential *buyer* of Puts and Calls, although a small part is slanted to bring in new *sellers*. This would seem to be a paradox, since the dealers are disposed to state that the market for options originates from the demands of buyers" (p. 25). With a proper understanding of dealers' activities in the option market, the supposed paradox of their advertising policies vanishes and with it the basis of the authors' conclusion. Further, a more important consideration bearing on the validity of this concluson—the profits earned by option buyers and writers (sellers)—suggests, if anything, that it is the sellers who may be hard to find.

The "paradox" is easily resolved. Almost all the options listed in the daily press and in privately circulated advertisements—the so-

1. Charles B. Franklin and Marshall R. Colberg, "Puts and Calls: A Factual Survey," *Journal of Finance*, XIII, No. 3 (March, 1958), 21–34.

2. These remarks are based on research into options which led to portions of my doctoral dissertation, *Put and Call Options: A Theoretical and Market Analysis*, submitted to the Department of Economics and Social Science, Massachusetts Institute of Technology, 1956.

called "specials"—are Puts and Calls which the dealers have in inventory. These inventories play an important role in the market. They are accumulated through the practice of writers' selling "Straddles"—a Put and a Call on the same stock—to option dealers, even though the dealer at the moment has a buyer for but one side of the Straddle. This practice has developed because of the writers' preference for Straddles rather than individual Puts and Calls, even though they may receive less from the Straddle sale than if they were to sell both a Put and a Call separately. By selling Straddles, a writer frequently can minimize the margins required of him, reduce the number of stock-market transactions needed to get him into a specific portfolio position, and perhaps obtain more favorable tax treatment. This concession to the writers which results in the accumulation of dealer inventories suggests that the option writers are not without some market power, perhaps because of the fewness of them.

The option dealer is thus faced with the task of selling the "papers" in his inventory. Since options are perishable, it is not surprising that dealers should call attention to their inventory items by advertising "specials" and by pricing them attractively. The advertising policies of dealers offer no paradox, therefore, nor are they indicative of a general shortage of buyers relative to the sellers. The advertisements attempt merely to divert buyers to already existing papers and away from options that would have to be newly written. Directing advertising at potential buyers rather than sellers is, of course, common to most industries and trades.

With respect to where the shortage—if there is one—appears in the Put and Call market, there is evidence that it may occur on the supply side among the writers. It has already been pointed out that certain practices suggest that the writers possess some market power. But the most obvious evidence stems from the disparate profits commonly believed to be earned by buyers and sellers. Franklin and Colberg concluded that options are overpriced, so that returns to buyers are low (p. 34). The returns to writers, on the other hand, have often been alleged to be quite substantial (p. 23).[3] These conditions are usually taken as evidence of a market where supply is restricted relative to demand; hence, if they exist in the option market, a relative shortage of writers would be implied.

2. The authors observe that Put premiums tend to be less expensive than Call premiums on the same stock, and they conclude that

3. No thorough investigation has as yet been made of the profit returns to option traders, mostly because of the lack of reliable data. I am currently undertaking research on the presently available data, from which some clues may emerge.

Puts are therefore better bargains for the buyer than Calls. A straightforward comparison of Put and Call prices is not a legitimate method for determining which option is the better bargain for the buyer. Unless the expected future value (the mean of the probability distribution of future prices) of the stock is identical with its present market price, the expected value of equal-lengthed Puts and Calls on a stock will differ. Since this equality of present price and expected future price does not exist for most stocks, market premiums for Puts and Calls should be expected to differ, and there is no theoretical reason why lower-cost Puts should be better bargains for a buyer than higher-cost Calls on the same stock.

A further complication in any comparison of Put and Call premiums which Franklin and Colberg failed to consider is the treatment of dividends in option contracts. When a stock upon which an option is written goes ex-dividend, the price at which the stock can be called or put is automatically reduced by the full amount of the dividend. There is evidence, however, that the market price of a stock does not tend to fall the entire amount of the dividend when the stock goes ex-dividend.[4] As a result, therefore, the option treatment of dividends works to the benefit of the holder of a Call and to the detriment of the holder of a Put. This factor would have a tendency to make the premium for Calls slightly higher than that for Puts, and, for this reason as well, simple comparisons of the levels of Put and Call premiums are not meaningful.

In practice, of course, it is always the actual movement of stock-market prices which determines whether Puts or Calls—or neither—will turn out to be bargains. Since the long-term trend of stock prices has been upward, it should not be surprising if Calls have tended to cost more than Puts. But no thorough statistical study has as yet been made of option premiums and stock-price movements, and hence no definite statements can be made regarding the success of option traders. It certainly cannot be claimed on the basis of thirty-eight quotations on October 17, 1955, that "Puts appear usually to be better bargains than Calls" just because the original cost of the Puts to the buyer was lower than the cost of the Calls on that day.

3. At any given date there is a close correlation between option premiums and stock prices, as Franklin and Colberg have shown. To emphasize this closeness of fit would be misleading, however, because of the considerable shifts that occur in the stock-price, option-premium relationships in different time periods. In similar correlations

4. James A. Campbell and William Beranek, "Stock Price Behavior on Ex-Dividend Dates," *Journal of Finance*, X, No. 4 (December, 1955), 425–29.

which I have made between Call and Put premiums and the stock-market prices for the same group of stocks on dates a year or more apart, significant shifts have occurred in both the coefficients in the regression equations. As a consequence, simple regression equations based on the quotations from one time period, such as those presented by the authors, are not a satisfactory means of estimating option premiums in another time period.

4. Franklin and Colberg conclude that "the stabilizing effect of a well-developed options market on stock prices would seem to be the main social virtue of this financial device" (p. 34). Whether or not this stabilizing effect is actually present, however, is open to question. The authors reach this conclusion by comparing short sellers with buyers of Puts. Buyers of Puts do not depress stock-market prices by first entering the stock market to sell stock, while short sellers do. But if stock prices fall, both holders of Puts and those with short positions would buy in the market to take profits. Therefore, they claim, the Put transaction lends more stability to stock prices than does the short sale. This demonstration is incomplete. Not only must the trading activities of the option buyers be considered but also the activities of those who have written and "converted" the options. It is the net result of all their market transactions which determines the effect of the option trading on stock-market prices. While taking into account all these activities is complicated, it is possible to show that option trading can have a stabilizing, de-stabilizing, or null effect upon stock prices, depending upon what is assumed about the trading activities of each of the parties.

To illustrate a null-effect situation, suppose that investor A buys a Put on stock X instead of selling X short. Investor B writes the Put on X but adjusts his portfolio by selling 100 shares of X that he otherwise would have held. Ninety days later, when the price of X has fallen, A enters the market, buys 100 shares of X to take his profit, and puts the stock to B. The stock remains in B's portfolio. In this example A's entering into the Put transaction has not changed stock-market activity from what it would have been if, instead, he had been a short seller. The option transaction merely induced investor B rather than investor A to make the initial stock-market sale. Other examples could show option trades to have net stabilizing or de-stabilizing influences. So whether option trading has a beneficial stabilizing effect on stock prices is still to be determined. The definitive judgment on this question, as with so many others concerning the option market, must await the day when more information about those operating in the market becomes available.

REPLY

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KRUIZENGA'S COMMENTS seem to us to provide valuable insights into some aspects of the market for Put and Call options but to be open to question on other points.

1. He objects to our statement that the main problem of the Put and Call brokers seems to be that of finding buyers rather than sellers. He explains how most options which are advertised for sale in the newspapers are dealers' inventories, which have accumulated because only half of a Straddle has been sold (a fact already explained in our original article, pp. 22–23). This overlooks the extensive private advertising engaged in by Put and Call brokers by means of mailed lists. This direct advertising is directed toward finding buyers for *either* a Put or a Call on any of a large number of stocks, with different brokers offering market options mainly in different stocks. (The list of "offerings" shown on p. 32 of our article is taken from such advertising.)

Kruizenga states that alleged high rates of return to options sellers implies a shortage of sellers rather than buyers. He seems to be referring to a perfectly competitive market with free entry in which prices are high because of short supply. But the Puts and Calls market falls far short of being perfectly competitive because not all potential suppliers are allowed to be actual suppliers and because of lack of knowledge on the part of buyers. Even the limited number of more or less regular sellers are usually willing to write more options than the number for which buyers can be found at brokers' "suggested" prices. Despite Kruizenga's observation, it seems, unfortunately, to be true that most holders of stock who are indifferent as to whether they retain or sell these securities at existing market prices are not given an opportunity to sell Call options. To qualify as a writer, one may be required by option and stock brokers to deposit as much as $100,000 on open account to maintain a continuous operation and to be free of danger of margin call. The minimum capital requirements are well documented. Herbert Filer is quoted as saying that, regretfully, the field is not one for the small investor who does not have enough funds to diversify in writing activities.[1] Another Put and Call broker states that the source of options is usually the big portfolio

1. Burton Crane, "Put and Call Writers Can Get Big Yields," *New York Times*, CIV, No. 35, 366, F2.

investors, individuals, or funds, which maintain a long-term position in securities of their choice.[2]

The actual experience of the authors in the options market, like their financial resources, is very limited. One experience seemed, however, to be indicative of the nature of the market. A wire inquiry was made through a local stockbroker of the price at which a Call could be sold on a particular low-priced, relatively stable stock. The reply was "$137.50," the request being interpreted as an interest in *buying* a Call. When an attempt was made to effect the sale of such an option, the wired reply was that there was no market for this option. It would appear that a seller can be found for such an option whenever anyone is willing to buy. The $137.50 floor tends to increase the surplus of amount supplied over amount demanded for low-value options.

Kruizenga points out that directing advertising at buyers rather than at sellers is common to most industries and trades and hence that advertising of Puts and Calls is quite naturally directed at buyers rather than at sellers. This observation tends to overlook the function of the option broker as a middleman rather than as the primary source of supply of options. Stockbrokers are usually just as interested in getting people to sell securities as to buy them, since a commission is earned both ways. When option brokers advertise only to find buyers, the indication is that sellers are not hard to find because prices are typically favorable from their point of view.

2. We agree with Kruizenga that the simple regression chart included in our article is not a sufficient basis for our contention that "Puts appear usually to be better bargains than Calls" and that no thorough statistical study has as yet been made along these lines. Our contention is, however, based on much more investigation and observation than is disclosed by the simple correlation which we included. For example, during the last two years we have noted that Call prices tend to exceed comparable Put prices even on *short-term* options in a *falling* market. Just as the general public has more understanding of the long side of the stock market than of the short side, there is probably more general understanding of the speculative usefulness of Calls than of Puts.

Our preliminary statistical investigations suggest that the positive difference between Call and Put prices cannot be fully accounted for by dividends and secular trend. Puts are usually the low-priced side of a Straddle because the interest in Calls is much greater. For the period of years which we studied, the Call interest was about 60 per

2. *The ABC of Puts and Calls* (3d ed.; New York: Godnick & Sons), p. 8.

cent of all option interest, as compared with 40 per cent for Puts. Puts and Calls may be thought of as joint products which appear when Straddles are written. Since the Straddles are written chiefly in order to sell the Call side, Puts, which are a perishable joint product, are apt to be relatively good bargains.

We believe that Mr. Kruizenga errs in implying that brokers' concessions to option writers in permitting the latter to sell Straddles operate to the detriment of the option brokers. Surplus options actually provide brokers with larger profits per sale, on the average, than market options. Advertising of surplus options provides certain "spillover" advantages to the options trade as a whole, in that it constitutes the bulk of the advertising conducted by the Put and Call brokers and serves to bring this market to the public attention.

It is also typical of the option-buying public not to value properly the dividend in terms of the *probability* that the option will be exercised. One brokerage house warns their salesmen and customers that only a "small percentage of Puts and Calls are ever exercised."[3] In testimony given before a Senate Committee in 1933 an outstanding spokesman for the option trade stated that about 12½ per cent were exercised.

3. As indicated above, the correlation between 90-day option prices and stock prices included in our article is not meant to be more than a rough indication of the relation, based on admittedly inadequate data. We hope that Kruizenga's fuller statistical investigation has provided a better picture of this relationship and its changeability. The absence of published market quotations on Puts and Calls makes it difficult, if not impossible, to secure adequate data in this field. To the extent that a buyer has available information on the usual relation between stock prices and option prices, he will be in a better position to recognize a "bargain" when he is offered one. It is desirable that this type of information be made available to option buyers, in order to make the market a less imperfect one so far as information on the buying side is concerned.

4. The present writers did not attempt to make a strong case for the stabilizing effect of an expanded options market on stock prices, but, on balance, we still believe that such an effect would exist. The conclusion was based on comparison of options with stop-loss orders, with short selling, with commodities futures, and with international arbitrage in stock. Kruizenga correctly states that a null effect would be present if a Put writer simultaneously sold a similar number of shares from his portfolio. But we question whether this would be a frequent occurrence. Option brokers usually recommend that Puts

3. "Why Traders Buy Puts and Calls," *Business Week*, September 28, 1957, p. 106.

be sold to acquire a stock in order to reduce the cost of such acquisition (by the net amount realized) and to provide flexibility in reporting income. The seller of a Put is willing to acquire ownership of the associated stock if it is put to him and hence is likely to be "bullish" rather than "bearish" regarding its prospects. As a consequence, it is unlikely that he will sell similar shares from his portfolio when he sells a Put option. Kruizenga's null effect, while possible, is improbable.

The buyer of a Put may hold such an option in lieu of placing stop-loss orders when he is also in a long position in the same stock. (We do not believe this sort of hedging to be as common, however, as brokers' booklets imply.) To the extent that this practice is followed, options avoid a public danger inherent in stop-loss orders, namely, that such orders may create a cumulative pressure in a decline due to selling orders being matched in order of their placement in the specialist's book. The holder of a Put cannot be stopped out at an unexpectedly low price, so he will not contribute to fear or panic selling over short periods.

Kruizenga correctly observes that the actions of option converters must also be considered. We believe that a stabilizing effect is typically exerted by converters in a period of rising stock prices. Conversion usually involves creation of a Call for which there is a current demand from a surplus Put. The option broker delivers the valid Put to the converter to serve as protection against a possible decline. The converter purchases stock and writes the Call. If the stock is later called because of an increase in its price, there is no need for the converter to re-enter the market. The exerciser of the Call is likely to sell the called stock in the market, adding to downward pressure. If the stock declines in price instead of rising, the converter will exercise the Put against the writer, who may or may not rebalance his portfolio at that time. General advice by option brokers to him would be to sell an additional Call to offset partially the probable loss.

It appears that the result of the converter's action will usually be stabilizing when stock prices are rising, since the typical buyer of a Call is more likely to sell the stock after a rise than is the typical option seller. In a declining stock market the action of the converter is unlikely to have any different effect than that of any other Put holder. While Kruizenga is correct in stating that the stabilizing or destabilizing effect of converters depends on the assumptions made, there appears to be a net stabilizing effect in the situation which is most common, i.e., conversion of a surplus Put into a marketable Call, followed by a rising stock market in this era of apparently chronic inflation.

A FURTHER NOTE ON TIME DEPOSIT INTEREST RATES

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LEONARD WEISS, IN "A Note on Time Deposit Interest Rates" (*Journal of Finance,* March, 1958), argues that a shift from demand deposits to time deposits differs from a shift from other near monies to time deposits in its effects on total potential community "liquidity" (deposits plus near monies) and credit. The former shift will result in enhanced liquidity, since it will increase the volume of near monies by more than the reduction in demand deposits. It will also mean an expansion of credit. The latter shift will reduce demand deposits by the same amount as above, but there will be no net change in the volume of near monies. Thus total liquidity of the community will be decreased, and so will total credit. These fundamental conclusions drawn by Weiss are sound. However, there exists a flaw in his formulation of the credit effect that should be corrected.

Weiss erroneously states that "a shift from demand deposits [to time deposits] will release reserves of $(R - r) \triangle T$ which will permit an increase in commercial bank credit of

$$\frac{1-R}{R}(R-r)\,\Delta T \quad \text{or} \quad \left(1+r-R-\frac{r}{R}\right)\Delta T\,,"$$

where R = reserve ratio against demand deposits, r = reserve ratio against time deposits, $\triangle T$ = dollar amount of shift from demand to time deposits. The correct formulation is that the shift in question will release reserves of $(R - r) \triangle T$, which will permit an increase in credit in the amount of

$$\frac{(1-r)\,\Delta T}{R} - \frac{(1-R)\,\Delta T}{R} = \frac{(R-r)\,\Delta T}{R}.$$

Suppose that there are only two banks in the system and a given amount of demand deposits in bank A are transferred to bank B as time deposits. Then the first term on the left side of this equation represents the increase in lending by bank B that is possible on the basis of gaining $(1 - r) \triangle T$ of excess reserves in the shift. The second term on the left side represents the decrease in credit that is forced on bank A by the loss of $(1 - R) \triangle T$ of required reserves

against demand deposits in the process of shifting. The combined net effect on credit is $[(R-r)/R] \triangle T$. Weiss's formula states that credit in the amount $(1-R)/R$ times the *excess* reserves $(R-r) \triangle T$ can be created in the shift, whereas the true credit potential is equal to $1/R$ times the excess reserves. Accordingly, if 5 and 18 per cent are assumed for r and R, additional credit equal to 72 per cent of the deposits shifted is possible rather than 59 per cent, as Weiss proposes.

Similarly, a modification of Weiss's analysis of the credit effect of a shift from savings and loan shares or mutual savings deposits to time deposits is in order. The net change in credit potential in this case is not equal to

$$\left(1+r-R-\frac{r}{R}\right)\Delta T-(1-\gamma)\,\Delta T=\left(\gamma+r-R-\frac{r}{R}\right)\Delta T,$$

as Weiss states; instead it is

$$\frac{(1-r)\,\Delta T}{R}-\frac{(1-R)\,\Delta T}{R}-(1-\gamma)\,\Delta T=\frac{(\gamma R-r)\,\Delta T}{R}.$$

The first two terms on the left side of the equation represent the same effects as described above. The third term on the left, $(1-\gamma) \triangle T$ indicates the amount by which savings and loan associations or mutual savings banks must reduce their loans and investments if they are to maintain a (self-imposed) reserve ratio of γ against demand liabilities. If $\gamma = r = 5$ per cent and $R = 18$ per cent, a shift such as this would reduce credit by 22.8 per cent of the shift in deposits rather than 36 per cent, as Weiss states.

Finally, the same correction should be applied to Weiss's conclusions regarding the proportion of any given increase in time deposits (holding total bank reserves constant) that must be drawn from demand deposits if the supply of credit is to increase. Instead of Weiss's formula

$$\frac{\Delta D}{\Delta S}>\frac{\gamma+r-R-(r/R)}{1+r-R-(r/R)},$$

we propose the following modification:

$$\frac{\Delta D}{\Delta S}>\frac{-(\gamma R-r)}{R-r},$$

where "$\triangle D$ represents time deposits that grow at the expense of demand deposits" and "$\triangle S$ is the growth in time deposits at the expense of deposits at other savings institutions." Thus, if total credit

is to increase, $\triangle D/\triangle S$ must be greater than 0.315, assuming the same reserve ratios as before, rather than 0.61, as Weiss states. His formula leads him to conclude that "at least 38 per cent of any additional time deposits must be attracted from demand deposits. . . ." Actually, the required proportion is 24 per cent if total potential credit is to increase.

Weiss's error appears once more at the end of his Note, when he underestimates the potential credit expansion of a $5 billion shift into time deposits. Again assuming 5, 5, and 18 per cent as the reserve ratios, about $3.6 billion (not $3 billion) of additional credit could be created if the entire shift came at the expense of demand deposits. If 80 per cent of the increased time deposits were drawn from demand deposits, and the remainder from other financial institutions, the net expansion could be about $3.1 billion, not "on the order of $2 billions."

REPLY

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IT IS WITH SOME embarrassment that I must acknowledge the error that Mr. Morrison has caught. As he points out, the same error was repeated at several points in my paper, so that a number of formulations were incorrect.

I receive a small amount of comfort, however, from the fact that Mr. Morrison's correction reinforces, rather than weakens, my argument. An increase in time deposits at the expense of demand deposits has an even more expansionary effect than I had envisioned; with only a small proportion of new time deposits coming from demand deposits, higher time-deposit interest rates could be expansionary; and the shifts among time deposits, demand deposits, and other forms of savings in the past suggest that higher time-deposit interest rates will increase liquidity and credit even more than my calculations appeared to indicate.

ABSTRACTS OF DOCTORAL DISSERTATIONS

FEDERAL GRANTS-IN-AID AND STATE TAXES*

A STUDY OF THEIR EFFECT UPON MAINE INDUSTRY

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THE OBJECT OF THIS study is to determine the interstate effects of grants-in-aid upon industry. To this end the federal grant programs are identified and described, the earlier studies of the effects of grants-in-aid are critically examined, and a new determination of interstate effects upon industry is made. It is generally agreed that all grants-in-aid have several distinguishing characteristics. The federal government conditionally offers money to the states according to a predetermined plan. The conditions require that a specific service be provided with the aid and that the state match the federal aid in some proportion.

Earlier studies of the differential impact of grants-in-aid upon states are criticized on two general grounds. The first involves several technical points concerning concepts and the application of concepts to this particular question. The second point of the critique is the suggestion, supported by historical evidence, that grants-in-aid are essentially a financial device—a way of paying for services—and are to be considered apart from the services themselves.

Considering the more technical arguments, it is noted that the payments to a state in aid of services are often compared with the incidence of federal taxes upon the state. The tax figure is adjusted according to the proportion of total taxes used for grant-in-aid projects. A positive or negative dollar sum results and is taken as an indication of gain or loss to the state. This general procedure is criticized because the money payments are followed for only one step in what is actually an intricate series of steps. Second, the emphasis is upon the provider of the services rather than upon those for whom the services are provided. On the loss side, a state's loss is more reasonably represented by the incidence of federal taxes within the state. How-

* A dissertation completed at Brown University in 1957.

ever, a comparison of tax incidence with money payments is questioned on the grounds that the quantities are not conceptually similar. Tax incidence might be compared with the benefits from public services or tax payments with aid payments, but other combinations are not comparable. Finally, through matching requirements, states are prodded into taxing and spending more than they otherwise would choose to do. Although this point is generally recognized, related problems have not been resolved. For example, a measure of gains and losses attributable to the induced state activity, which can be combined with the measures of gain or loss due to the federal government's activity, has not been developed.

The more general criticism stems from a disagreement over the role which grants-in-aid play in our public finance. An examination of the circumstance in which the major grant programs arose suggests that the services which were and are financed with the grant arrangement are services which would no doubt have been provided by the national government with or without grants-in-aid. The implication for analysis is that it is reasonable to assume a level and distribution of services and then to consider the effects of alternative ways of financing them. This basic approach was used to determine the interstate effects of the federally aided highway and public assistance program upon Maine's industry.

The existing grant-in-aid financing of services is compared with a plan of finance which is neutral among states, i.e., one which would have the same effect on similar industrial enterprises, no matter where they were located. For purposes of discussion, complete federal financing was compared with grants-in-aid because it was a practical alternative to the present plan and also because it approaches an ideally abstract neutral standard which facilitates comparison. Replacing the present grant-in-aid financing with geographically neutral financing of the same services would have a different effect upon the tax load of industry in each state. An interstate comparison of these differences measures the interstate pressure on industry attributable to the existing grant arrangement.

The study concludes that the interstate tax pressures of grants-in-aid upon industry are often of the order of magnitude that could influence the location of industry and that these forces generally work in the same directions for all the industries in a particular state. Considering the thirteen states included in this study, tax loads (1954) attributable to grant-in-aid financing of highways and public assistance amounted to as much as 3 per cent of the income of companies in some states and as little as a few tenths of 1 per cent of income for

similar companies in other states. Focusing attention upon Maine and its five most important industries, the tax pressures attributable to the two major grant-in-aid programs are greater upon these industries in Maine than in Ohio, New Jersey, and New Hampshire. On the other hand, the tax pressures attributable to the grant programs are greater upon these industries in Alabama, South Carolina, Georgia, New York, North Carolina, Wisconsin, Tennessee, Oregon, and Massachusetts than in Maine.

THE ECONOMIC IMPACT OF LIFE INSURANCE INVESTMENTS ON THE AMERICAN ECONOMY*

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THE ECONOMIC IMPACT of life insurance investments on the American economy is considerable. The level premium plan together with the savings features included in most policy forms have placed large volumes of reserves in the hands of the life companies. In fact, institutionally they attract more savings from the American people than any other medium.

Evaluating the impact of the investment of these reserve funds, there are both positive and negative effects on the welfare of the economy. Relative to economic growth, the most glaring negative consideration is the fact that the life companies have not participated actively in supplying equity capital. This indictment is especially valid in this present century, since the large accumulation of reserves accompanying the growth of the industry warranted the taking of additional risks. The experience of the life companies themselves with equity investments reveals the possibility of achieving higher yields even without additional risk.

At the same time in the area of debt securities, where the life companies are a dominant influence, they have made a definite contribution. Witness their support of the railroads and subsequently the public utilities in their developmental period. In recent years they have been channeling large sums to meet the financial needs of the industrial sector of the economy. In addition, their support of the mortgage market during both postworld-war building booms, as well as limited construction of residential housing projects, is significant.

Similarly, the investment of the substantial volume of funds at the disposal of the life insurance companies has had an important impact on the current level of economic activity. Although they do increase their cash holdings somewhat in times of recession or depression, their lack of need for liquidity and their policy of remaining as fully invested as possible at all times enable the life companies to refrain from contributing to an economic decline.

As to their effect on the inflationary phase of the cycle, the life companies generally reduce their cash holdings during these periods,

* A dissertation completed at New York University in 1958.

thus contributing mildly to the pressure on prices. In the post–World War II period their quest for higher yields prompted them to sell large quantities of United States governments, thus monetizing a large part of their federal debt holdings. The resulting funds, however, were employed to meet the capital needs of the expanding private sector of the economy.

As to their impact on the degree of economic concentration, although they do represent "big business" in terms of assets and are dominated by large firms, the large number of companies (1,300) in the industry and the ease of entry of new firms provide a significant competitive stimulus. Their principal economic motivations appear to center around (1) their desire to achieve a reasonable return on invested funds and (2) their desire for new sales records.

This search for appropriate yields is, per se, an economic contribution, since ostensibly they will be available where the funds are most necessary. The logical application of this principle would involve a greater participation by the life companies in the equity market than is now the case.

Their effort to attain new sales volume is understandable and undoubtedly results in life insurance protection for many who otherwise would have none; but perhaps equal emphasis should be placed on a prospective policyholder's ability to finance premium payments, as well as on the maintenance of existing business.

THE FISCAL ECONOMICS OF STATE BONUSES FOR VETERANS*

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SINCE COLONIAL TIMES in what is now the United States a grateful people has granted economic rewards to veterans. At all levels of government, with varying extensiveness, some provision has been made for the ex-soldier. Benefits granted in the formative period of the country became precedents for later practices.

This thesis deals with a comparatively recent development: payment by states of a cash bonus to veterans. The study (*a*) traces the origin and development of state bonuses for veterans; (*b*) analyzes the methods of raising the funds; (*c*) examines the factors that appear to have influenced the decision to pay or not to pay a bonus; and (*d*) draws conclusions on policy toward bonuses and on procedures in legislation and administration.

After the Civil War, individual states provided assistance for disabled and needy veterans. Before World War I, three northern states granted supplementary payments to National Guardsmen called to federal duty. North Dakota, in 1919, was the first state to grant a payment identified as a bonus. Twenty states paid bonuses for World War I before World War II, and two additional states granted bonuses for World War I after World War II. The total cost exceeded $600,000,000, of which only about $400,000,000 was paid to veterans, the rest went for interest and administration costs. Three main methods of financing were used—taxation, bond issues retired from existing taxes, and bond issues retired from newly imposed taxes.

Twenty-one states paid bonuses for World War II, and, up to 1958, nineteen of these states had paid a bonus for the Korean conflict. The latter bonuses were financed by the same methods as after World War I, but two variant techniques were employed: use of a surplus in the general fund and some combination of surpluses, taxes, and bonds. The total cost of the World War II and Korean conflict bonuses, paid and authorized, was more than $3,000,000 and raised the total expenditures for state bonuses since 1917 to approximately $3,600,000,000.

States that have paid and states that have not paid bonuses fall

* A doctoral dissertation completed at New York University in 1958.

into a fairly well-defined geographic pattern. States in the New England, Middle Atlantic, East-North Central, and West-North Central regions and only four states in other regions have paid one or more bonuses; states in the south Atlantic, East-South Central, West-South Central, and Mountain regions have paid few or no bonuses.

No single reason explains why a state has paid or has not paid a bonus. By the time of the Korean conflict, precedent was probably the most important single determinant of policy. In turn, a precedent of paying a bonus or of inaction appears to have resulted from many possible factors. The thesis distinguishes taxable ability as measured by per capita income, the cost of Confederate pensions, political pressure by veterans' groups, party advantage and the one-party system, a military tradition, discrimination against Negroes, a pioneer spirit, substitute benefits, and state pride and emulation.

The study suggests several conclusions on policy. The first is that a wave of bonuses now tends to follow a major war. The second conclusion is that the older concept of aiding disabled and needy veterans, especially in their declining years, has come to be challenged by the concept of aiding veterans at a more strategic time—the height of their vigor. The third conclusion questions whether cash bonuses benefit veterans and the community as much as programs that assist them in such ways as buying homes, launching businesses, or acquiring skills.

Examination of procedures in legislative drafting, administrative machinery, administrative practice, debt management, and the earmarking of taxes discloses variation from state to state and, with exceptions in some sectors, advances between World War I and the later wars.

Bonuses are not necessarily a thing of the past; the last bonus for the Korean conflict may be still to come, and a major war is likely to produce demands for new bonuses. A state that grants a bonus in the future can benefit from comparison of different practices in legislative drafting and other areas. A state that contemplates granting a bonus should weigh programs of a pattern that promise greater usefulness for the veterans and society than do minor cash distributions to individuals.

THE POSITIVE ASPECT OF BANK CAPITAL*

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THE INFLUENCE, IF ANY, of the capital position of the individual bank upon the willingness of its management to acquire assets other than cash and United States government obligations and to make loans is studied for 207 large commercial banks with head offices (2 to 21) in 53 cities. These banks are designated as "selected banks."

The positive association of the ratio of capital funds to total assets (C/T ratio) and the ratio of risk assets to total assets (R/T ratio) and the positive association of the ratio of loans to total assets (L/T ratio) are measured in various groupings that provide equal geographic representation of the selected banks at three observation dates—the year ends of 1938, 1945, and 1952. A smaller group of these banks is studied, to measure positive association of these ratios at December 31, 1957.

The 207 selected banks include all commercial banks (excluding specialized banks) that had $20 million deposits or more at December 31, 1938, continued existence to December 31, 1952, and had their head offices located in the same cities with at least one other selected bank. The aggregate assets of the selected banks comprised over 50 per cent of the commercial banking assets of the United States at all three observation dates.

The study discloses that the positive association of the C/T ratios with the R/T ratios and L/T ratios of the selected banks was of very limited proportions, and it could not be concluded that capital strength generally exercised an important influence on the allocation of commercial bank assets.

There was no satisfactory evidence that the lending activities of commercial banks would be increased by increasing their capital funds. In many cases, increases in capital funds of individual banks followed, rather than preceded, increases in their holdings of risk assets and loans.

Bank capital is also studied in relation to size of bank, branch banking, the extent of financial disclosure, distribution of bank ownership, and deposit growth.

* A dissertation completed at Columbia University in 1958.

Substitutes for bank capital are also evaluated, notably reserves for future loan losses.

A procedure employing quadrant groupings and simple relatives is presented for the preliminary screening of the capital adequacy and the employment of assets of an individual bank in comparison with other banks on a local and national level.

The statistical measurement of positive association is calibrated on a percentage scale, and the relative extent of variation of the different ratios in the groupings of banks is compared by means of range relatives.

Sixty-three statistical tables present detailed data on the geographic variation of capital strength and asset allocation and the relative importance of the selected banks.

Nine appendixes list the ratios for each of the 207 selected banks, so that individual banks may be compared; summarize the pronouncements of the Federal Deposit Insurance Corporation on capital adequacy from 1938 to 1956; present some opinions of commercial bankers and others on capital adequacy; discuss some disabilities of bank supervision; and provide a bibliography.

THE DETERMINATION OF THE STOCK OF MONEY AND THE PROMOTION OF ECONOMIC ACTIVITIES IN EGYPT*

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THIS STUDY HAS two objectives: (*a*) investigation of the factors determining the stock of money in Egypt under two monetary systems —the Sterling Exchange System, which operated from 1916 to 1947, and the new monetary arrangements enacted in 1948–51, and (*b*) investigation of Egypt's twin problems—economic poverty and economic instability—in terms of the bearing of the operation of the Sterling Exchange System and the extent to which the new monetary system might contribute to their solution.

I. Under the operation of the Sterling Exchange System, the role of the National Bank of Egypt in controlling legal tender and commercial credit was passive.

In wartime, expenditures of foreign troops were the predominant factor causing increases in the stock of money. The general rises in price levels which were caused by the increases in the stock of money were tempered by the decline in its velocity of circulation. Military spending and money creation took the course of a money-price-money spiral.

In the interwar period, the demand for money was conditioned by (*a*) changes in the trade balance, (*b*) changes in cotton values, which were the major determinants of the banks' advances, and (*c*) a galaxy of other factors influencing the banks' investments.

II. The new monetary arrangements of 1948–51 virtually delegated the monetary control to the state. They equipped the National Bank of Egypt with weapons to control commercial credit. However, the most effective practical weapon of the new central bank is the variation of the compulsory reserve ratios.

The new monetary system has tended to free the money supply from the trade balance and to insulate the Egyptian capital and money markets from markets elsewhere.

III. Combined with adverse social conditions, the low real per capita income and the low productivity of the Egyptian economy

* A dissertation completed at the University of Wisconsin in 1957.

stem fundamentally from an adverse ratio between population and economic resources.

Fluctuations of export values may be held as the major source causing fluctuations in money national income. Changes in the terms of trade have had significant effects on real national income.

IV. The operation of the Sterling Exchange System sacrificed domestic monetary equilibrium for international equilibrium. Stable monetary relationships between Egypt and the sterling group may be credited with reducing the instability in the markets for Egypt's exports; but the domestic purchasing power of the Egyptian pound fell drastically in wartime. Monetary policies having desirable social effects conflicted with the maintenance of the parity between the Egyptian pound and the sterling.

The credit system fitted itself to a "lopsided development" of the Egyptian economy. Commercial banks concentrated their operations on financing foreign trade and looked for foreign markets in which to invest their funds. They contributed little to mobilizing personal savings and financing capital formation.

V. The conflict between external and internal stability in the Egyptian economy requires some resort to domestic monetary measures to offset external disturbances of limited scope.

Low elasticity of domestic production, low real per capita income, and high propensity to import would render an over-all policy of inflationary financing of capital formation in Egypt a tricky path.

In general, the central bank of Egypt should strive to see that economic development is made within a framework of a "reasonable" financial stability. That is to say, aggregate spending should be kept generally within the limits of the available resources at current prices.

PREDICTIONS DERIVED FROM THE EMPLOYMENT FORECAST SURVEY

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SINCE 1946 THE Department of Labour of the government of Canada has conducted a sample survey of the employment forecasts of approximately 800 establishments in selected industries. The forecasts solicited by this survey, known as the "Employment Forecast Survey" or "EFS," are made each quarter by employers for target dates three and six months in the future. Until the end of 1956 these forecasts were used to project available indexes of actual industrial employment to these target dates as predictions of their future magnitudes. These projected employment indexes, or EFS indexes, were published each quarter, together with supplementary material, in a report given restricted circulation within the Canadian government. The dissertation constitutes a description, analysis, and evaluation of the EFS employment predictions for the manufacturing industries.

The study is based almost exclusively upon data secured from three sources: the EFS predictions included in the quarterly *Employment Forecast Survey* reports of the Department of Labour; the actual and forecast employment of the sample establishments as recorded in the confidential files of the Department of Labour; and the actual employment indexes for the manufacturing industries published monthly by the Dominion Bureau of Statistics, Ottawa.

Aside from the general introductory and preliminary descriptive material, which places the EFS predictions in a wider context and explains their origin, the study consists of two parts. In the first part, an attempt is made to describe and evaluate the errors of the published EFS predictions as estimates of the direction and magnitude of the non-seasonal changes in the corresponding actual employment indexes. This investigation discloses that the EFS predictions were of only slightly greater reliability than sets of hypothetical predictions derived by a simple, alternative technique. Furthermore, the analysis suggests that the EFS predictions were in error largely because they tended to underestimate the magnitude of the non-seasonal changes in the corresponding actual indexes and frequently

* A dissertation completed at Duke University in 1957.

failed to predict the direction of these movements. The errors of the EFS predictions were not amenable to correction.

The errors of the EFS predictions can be considered to arise from two sources: the sample may be inadequate, or the forecasts (either singly or in aggregate) may be in error. In the second part of the dissertion, estimates are derived of the errors attributable to both these causes, and an analysis is made of the extent to which these errors might have been reduced at their sources. Although necessarily tentative, the investigation discloses that there is every reason to believe that the sampling errors could have been reduced, had an improved sample design been implemented and the size of the sample substantially increased. There was no indication, however, that the errors which arose from the forecasts submitted by the sample establishments could have been reduced. This means that, under the most optimistic assumptions, the potential improvement in the adequacy of the EFS predictions lay solely in the elimination of sampling errors. Because the sampling and forecast errors have tended to be offsetting, only a marginal improvement in the reliability of the EFS predictions would have been available through this avenue.

The sampling errors were as large as they were apparently because the present sample does not include a sufficiently large proportion of the smaller establishments. Yet the data reveal that the smaller establishments have tended to submit the least adequate forecasts. The possibility exists, therefore, that attempts to reduce sampling errors would have resulted in offsetting increases in the errors of the aggregated establishment forecasts. The potential improvement in the reliability of the EFS predictions thus appears to have been small. In fact, there is some danger that attempts to improve predictive reliability (through improvement of the sample) would have had the opposite effect.

Having shown that the previous EFS predictions were of doubtful value and not amenable to improvement, it can reasonably be concluded that the attempt to derive employment predictions by this method should be abandoned. This decision was taken by the Department of Labour at the end of 1956.

EXCHANGE STABILIZATION FUNDS*

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THIS STUDY ANALYZES and evaluates the operations of the fourteen exchange stabilization funds[1] established during the 1930's as devices for coping with pressing problems arising out of the international financial disequilibrium. The lessons gained from their experience, coupled with a theoretical analysis of the problem of exchange stability as opposed to price and income stability, are then applied to similar problems in the period following World War II. It is suggested that national, as well as regional, stabilization funds could serve a useful purpose—within the framework of the International Monetary Fund—in facilitating the movement toward freer trade and currency convertibility.

Because of the operational secrecy surrounding the transactions of all stabilization funds, their methods and policies had to be deduced from indirect evidence. While some of the funds performed no useful function, others—primarily those patterned after the British Exchange Equalization Account—were extremely helpful in carrying out the policies for which they were destined. The British Account was successful in securing the advantages of exchange flexibility and at the same time avoiding too violent exchange fluctuations. Especially after the Tri-Partite Agreement of 1936, a balance was struck between the need for exchange stability, on the one hand, and the desire to follow independent domestic policies, on the other. Although most funds were initially created as instruments of nationalistic policies, they were later used as tools of international co-operation.

After evaluating possible standards in the field of international exchanges, it is argued that a certain degree of exchange flexibility is preferable to rigidity under current economic conditions, provided that exchange fluctuations are contained within predetermined limits. Stabilization funds can be operated to maintain the limits of exchange fluctuations, as well as to moderate fluctuations within those limits. They can also offset the effect of disruptive capital movements

* A dissertation completed at the University of Michigan in 1954.

1. Exchange funds were established in the following countries: Great Britain, the United States, Belgium, Canada, France, the Netherlands, Switzerland, Argentina, Mexico, Colombia, Spain, Latvia, Czechoslovakia, and Denmark. The last six on the list were only nominal funds and made no significant contribution.

on the domestic money market. Exchange adjustments beyond authorized limits should be permitted only as a result of multilateral action and only when fundamental economic conditions require such a step. Under supervision of the International Monetary Fund, continuous co-operation between funds (as well as mutual aid) would form a reasonably stable system of international exchanges. The International Monetary Fund could aid national funds by assisting in diagnosis of problems and by supplementing their resources.

Such a system takes on special significance in view of the current trend toward regional integration. In forming a customs union or a free-trade area, nations give up much of their independence in imposing trade and payments restrictions. More reliance must therefore be placed on domestic price and income adjustments as a means of maintaining equilibrium in the external payments balance. The burden on the domestic economy can be alleviated by adopting a system of "controlled exchange flexibility." This system can be either one in which exchange rates between the currencies of the member countries are fixed but fluctuating jointly vis-à-vis the outside world or one in which rates within the union are also capable of variation.

Particularly under the first alternative, a customs union may desire to operate a *regional* rather than a national stabilization fund to carry out the functions discussed above and to stabilize exchange rates within the union. Because of the high degree of monetary integration involved, regional funds would be difficult to establish. But, once established, they would facilitate close international co-operation. Like their national counterparts, regional funds could join an international system of flexible exchanges.

FEDERAL CREDIT UNIONS IN THE UNITED STATES AN ANALYSIS*

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CREDIT UNIONS IN THE United States have yet to celebrate their fiftieth birthday. Nevertheless, they have shown rapid growth in the last two decades and have attracted the attention of the banking community, which has become aware of the phenomenal growth of these societies and tends to view them as competitors no longer meriting special subsidy in the way of absorption by others of part of their expenses and exemption from federal income taxes. The present study seeks to trace the development of credit unions, to analyze their current operations, and to assess their place in the financial system. What do they do, and why have they grown so rapidly recently? Since no comprehensive nation-wide data are available, but only earlier studies of the situation in several states, the data used in the detailed analysis relate to federal credit unions, whose origin is as recent as 1934.

The analysis of credit unions followed in the present study is centered upon their operations as reflected in balance-sheet and income data. It therefore employs techniques that resemble those of the National Bureau of Economic Research in their studies dealing with financial institutions which extended cash instalment loans to consumers, namely, industrial banking companies, personal finance companies, and personal loan departments of commercial banks, each published in 1940. It may be noted that the fourth principal lender—the credit union—which represented in 1953 a $2 billion industry, was not included in the series.

A credit union is one of a variety of types of specialized financial institutions. Its distinctive features are (1) its co-operative structure, with ownership and democratic control vested in a membership composed of individuals with some pre-existing bond of unity—in practice, chiefly occupation—and (2) its function of providing small loans for "provident" purposes to its members at rates limited by statute, while encouraging thrift and educating its members in the wise management of their own financial affairs. It originated as an

* A dissertation completed at New York University in 1957.

offshoot of the co-operative movement and as a financial device for "remedial" lending by inducing individuals to help themselves.

The driving force behind the development of credit unions in the United States was Edward A. Filene, who financed organizations designed to secure enactment of credit union laws, to promote the organization of credit unions, and to have supervisory agencies display an attitude of sympathetic and helpful understanding of the credit union's problems. He spent approximately $1 million of his own fortune to further the American credit union movement.

In conclusion, it must be said that the credit union merits praise for what it has accomplished. It has brought together groups of individuals interested in understanding the problems involved in their own personal finances. It has given them training in operating their own organizations. It has stimulated thrift among wage-earners and has provided a relatively low-priced source of consumer credit for them. It has been a worthwhile adjunct in labor relations, in much the same way as has employee stock ownership. It has provided a convenient avenue for accumulating savings and the repayment of loans, especially in plants where the payroll deduction plan prevails. It has spread throughout the nation, so that no state today lacks these facilities.

By the same token, the credit union has certain elements of weakness. Mostly small in size, it often depends on subsidy—typically by the federal government, employer, and members—to enable it to survive, at least during the earlier years of its existence. In view of the importance of psychological factors rather than individual rewards for the success of the credit union, as well as the youth of the movement, there is a high rate of turnover. This rapid formation and liquidation of federal credit unions has occurred during a period of economic recovery and prosperity in the United States and has not been the result of basically adverse economic conditions, with their attendant losses, such as faced other classes of financial institutions in the early 1930's. As savings institutions, credit unions have certain defects. Their members' balances lack to a substantial degree the protection afforded by diversified investments of high caliber. Moreover, credit union members are afforded only a narrow margin of protection by reserves and surplus—less than that in other leading classes of thrift institutions. These other thrift institutions, too, have their savers' funds largely protected up to a specified limit per individual by deposit or share insurance.

BRITISH TRADE CYCLES AND AMERICAN BANK CREDIT, 1815–40*

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ALTHOUGH APPREHENSION NOT infrequently arises concerning the effect of general depression in one country on the economy of others, very little economic analysis has been devoted to determining how economic fluctuations are actually transmitted from one country to another. During the period 1815–40, cyclical fluctuations in the United States were concurrent in timing with those in England. Contemporary opinion often attributed the fluctuations to the operations of the banks, asserting that they overexpanded credit, bringing about excessive imports, and then contracted credit, causing crisis and depression, when export demands for specie arose. This study attempts to determine the manner in which impulses to economic fluctuations were transmitted from the British economy to that of the United States and the part which banks in the United States played in the fluctuations.

An examination of the characteristics of bank credit under conditions of note-issue banking and regulation of the currency by the Second Bank of the United States is made, in order to provide a model of the bank credit mechanism. By means of the model, the fluctuations in the volume of bank credit are examined through the monthly statements of the several offices of the Second Bank of the United States. Statistics of trade and finance, including specie movements and foreign-exchange rates, are investigated, in order to see whether there is a meaningful pattern in the recurring fluctuations. Contemporary organization and practices of Anglo-American trade are reviewed, in order to note their potentialities for transmitting impulses to expansion or contraction.

The expansion phase of each cycle was initiated by an extraordinary increase in the quantity of cotton exported to England. This was followed by increased imports of specie into the United States. Next, in each case, the Second Bank of the United States, influenced by larger specie reserves, released the state banks from restraint by expanding its earning assets and its note issues. General credit ex-

* A dissertation completed at the University of Texas in 1958.

pansion on the part of the banks followed, accompanied by increased imports.

As the expansion proceeded, imports increased proportionately more than exports, thus creating a demand for foreign exchange. As a result, specie exports occasioned sudden curtailment of the bank credit expansion, which brought about a crisis, followed by depression. The timing of the crises was most often accounted for, however, by a reduction in the supply of foreign exchange through a fall in the price of American export commodities, particularly in the price of cotton.

The timing of the periods of rapid expansion and of the crises that terminated them is followed more precisely by reference to monthly and weekly series, including the accounts of the Second Bank of the United States, foreign-exchange rates, indexes of commodity prices, and quantities and prices of American cotton in the Liverpool market. Conclusions from the data concerning the timing of the financial crises are corroborated by testimony of contemporary observers.

From 1815 to 1826 the impulses to expansion and contraction were transmitted mainly through prices and quantities of goods moving in international trade. The impulse to expansion arose in the British demand for American cotton. The impulse to contraction came about through price declines for American export commodities and, in some cases, through the competition of British goods consigned to the United States and offered at successively lower prices.

After 1826, financial relationships as well as prices and quantities of goods were of some importance in transmitting the impulses to expansion and contraction. There were fluctuations in the volume of British credit financing American imports and in the volume of American securities purchased by British investors.

MONETARY AND DEBT-MANAGEMENT POLICIES, 1953–55*

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THE PURPOSE OF THIS thesis is primarily to examine and evaluate monetary and debt-management policies during 1953–55; a period which was particularly noteworthy for at least two reasons. First, it was characterized by the development of an "inventory cycle" of moderate proportions. Second, it represented a time during which all major indirect controls were employed and in a setting of relative freedom of action. Not only were direct controls removed prior to this period, but Treasury–Federal Reserve System relations were relatively unencumbered, largely because of the so-called "Accord" reached in March, 1951.

In general, it is the author's contention that Federal Reserve and Treasury policies were not entirely countercyclical during this period. More important, certain basic changes in objectives and policies occurred, which, if continued, may seriously impair the effectiveness of the stabilization policy in the future.

The policy of credit restraint imposed early in 1953 was ill-conceived: the only legitimate basis for such a policy—actual or imminent inflation—was manifestly absent. Moreover, even if inflation were a reasonable surmise, exception could be taken to the degree of restraint imposed. Federal Reserve policy shifted abruptly toward ease in early May, and, in view of the fact that the downturn occurred after this shift, System timing was quite good. It is not clear, however, that the reasons for this shift were based on an accurate forecast of the impending downturn.

In terms of direction, monetary policy was satisfactory during the decline. The System undertook, perhaps too modestly at first, to ease credit conditions; the Treasury confined its financing operations to short- and intermediate-term issues, in order to interfere as little as possible with the flow of funds into private investment. The principal criticism of policy during the downturn is that it was not sufficiently vigorous. Also, during the period of initial recovery in late 1954, preoccupation with inflation prompted a premature shift toward credit restraint. Subsequent developments in 1955–56 evidenced inflation-

* A dissertation completed at the University of Washington in 1957.

ary pressures, but in late 1954 and early 1955 the future was uncertain.

There are, however, much more important criticisms of monetary policy during 1953–55 than those relating to the direction and timing of the measures employed. Analytically, these criticisms may be divided into two broad categories: the first relates to the objectives and policies pursued by both the Federal Reserve and the Treasury; the second group of criticisms attaches to the techniques employed to implement policy decisions. Our criticisms and evaluation may be briefly summarized as follows. Based upon the notion that a "free" government securities market and "natural" interest rates are desirable objectives which contribute automatically to economic stability, the Federal Reserve promulgated a policy of "minimum intervention," which resulted in important changes in both operating policies and techniques. The decisions to limit System transactions to short-term government bills and to refrain from supporting Treasury financing operations derived directly from the renunciation of responsibility for market developments implicit in the minimum-intervention dogma. These objectives were rejected on the grounds that they are incompatible with other social objectives of higher priority, i.e., the maintenance of relatively full employment and price stability.

Having rejected the "free"-market hypothesis, the only remaining argument for limiting System transactions to "bills only" and for refraining from supporting Treasury financing is that in so doing the efficacy of monetary policy will be enhanced. The analysis suggests that this position is untenable: restrictions upon the type and timing of System operations serve no useful purpose, limit the effectiveness of monetary policy, and may add to the problems of both the Federal Reserve and the Treasury.

A SURVEY AND EVALUATION OF ALTERNATIVES IN A STRENGTHENED LOCAL GOVERNMENT REVENUE STRUCTURE WITH SPECIAL REFERENCE TO PENNSYLVANIA*

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A DANGEROUS IMBALANCE exists today between local tax capacity and local expenditure requirements. Four main possibilities for dealing with the problem are (*a*) structural improvement of local government, (*b*) centralization of functions at the state level; (*c*) more state aid; and (*d*) new local sources of revenue. Structural reorganization is essential but time-consuming, and local government needs immediate strengthening. This study assumes that avoidance of centralization is a desirable social goal and that a wide area of local competence exists for the provision of public services. It argues that the last two options are the most desirable. Of these, state aid carries the dangers of central control or extravagance in local expenditures. General-purpose per capita grants, however, preserve certain advantages of decentralization and have important fiscal advantages obtainable by adjusting grants to local needs and developing stabilization reserves.

The heart of the thesis is an evaluation of the real estate tax and various non-property taxes in terms of equity, neutrality, administrability, significance of yield, and stability or flexibility of yield. Special emphasis is placed upon non-realty taxes employed by Pennsylvania local governments. These are the earnings tax, per capita or poll tax, amusement tax, gross receipts tax, deed transfer tax, intangible personal property tax, personal occupation tax, and other sales taxes.

The intangible personal property tax of the counties and the occupation tax typically are unproductive, inequitable, and difficult to administer. Local units should discard them. Analysis of the realty tax confirms its regressivity, particularly in the lower-income ranges but (1) introduces significant qualifications of this criticism of the tax and (2), in contrast to prevailing opinion, discloses considerable potential for growth under normal expansionary conditions and greater stability in a contraction than in the past because of the in-

* A dissertation completed at New York University in 1957.

creased stability of the economy, better administration, reduced burdensomeness.

Stress is placed on the need for and feasibility of greater local reliance on non-realty tax revenues. Of these, the earnings tax is most promising. It has several recommendations as a major supplement to the real estate tax: (1) a high yield at low rates, (2) proportionality or slight progressivity in the lower-income ranges, and (3) flexibility of yield. It has an elasticity coefficient of about 1.00 as compared with about 0.50 for the real estate tax under growth conditions. The greater stability of realty tax collections in event of recession, together with sounder local credit, the federal commitment to promote full employment, and the increased importance in local budgets of state aid appear to warrant greater local reliance on the earnings tax.

Per capita or poll taxes in Pennsylvania provide more local revenue than any non-property tax except the earnings tax. They are regressive and difficult to administer but, levied at fairly high rates of $10 or $15 and with certain safeguards, can produce good yields for small rural communities with the least serious equity effects.

Gross receipts taxes at moderate rates, deed transfer, and amusement taxes are all more equitable and easier to administer than the real estate tax and provide significant yields for many jurisdictions. Service charges are more equitable than real estate taxes, more easily administered, and can produce large revenues.

Administration of the real estate tax should be improved, but that tax is not the only, or even the best, source of increased local revenues. More intensive utilization of non-property revenue sources is immediately practicable for local governments, can improve the equity of local revenue structures, and improve the response of local revenue in periods of economic growth or inflation without undue danger to financial strength during periods of contraction. They can buttress local revenue systems and can be placed in operation more quickly than major attempts to improve the structure of local government.

GOVERNMENT SPENDING: PROCESS AND MEASUREMENT*

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AN EXAMINATION OF the major phases of the federal government spending process reveals that the economic impact of government spending may occur during any of the phases of the process. These phases are (1) granting of financial authorizations by the Congress, (2) placing of contracts with business firms, (3) production of goods and services, and (4) delivery of the items to the government and payment therefor.

Under certain circumstances, the announcement effects of the newly granted obligational authority may cause an increase in private spending in advance of the placement of contracts or expenditure of funds. More usually, economic activity will be affected soon after the contracts are let, as private production gets under way. This production on government order will be recorded in the national income accounts as increases in gross private domestic investment (change in business inventories).

Only as production is completed and finished items delivered to the government, will the transaction appear as a government purchase. The delivery will be treated simultaneously as a decrease in gross private domestic investment; no net effect will occur in the level of gross national product at this point. The contribution will have been made earlier, during the production period prior to the actual government expenditures.

However, the mere granting of appropriations and the placement of contracts may have little effect on the level of production when resources are fully employed. Also, to the extent that government orders can be filled out of existing inventories, the effect on production may not occur until the depleted inventories are restocked. Despite these and other complications, the primary impact of government procurement on the level of economic activity usually occurs in advance of the actual government expenditure.

Government spending for other than the acquisition of goods and services may approximate more closely, or even lead, the economic impact. This would ordinarily be true for transfer and interest pay-

* A dissertation completed at Princeton University in 1958.

ments and grants to state and local governments where the contribution to economic output would be made as the funds are respent. This would also hold for lending programs, except where production is begun on the basis of the government's commitment to lend at a later date. Purchases of existing assets merely add to the liquidity of the recipients, unless the proceeds are used to purchase or finance current output.

The generally used measures of federal spending cover only the completion phase of the spending process, represented by disbursements or deliveries. Measures of some of the other stages of the process can be obtained or prepared. Data on budget authorizations granted by the Congress can be secured annually from the budget document. Information on contracts let and other "obligations" incurred by federal agencies is gathered for internal budgetary purposes but is not aggregated. There are no current data on production on government account, as reports on inventories do not reveal the amounts relating to government orders.

Of these gaps, the one most readily filled is a current series on "obligations" incurred by the federal government, which can be prepared from operational data.

Measures of the early stages of the government spending process can be used for many purposes of economic analysis. They are lead series which quickly register changes in demand and indicate future trends in governmental disbursements. They can also be used to evaluate developments in the economy during periods when changes in government purchasing exercise any important role.

The possibility of economic effects occurring during the various phases of the government spending process necessitates taking measurements of the spending stream at earlier points than merely the completion stage. What is needed is not a single measure of federal spending but a tool kit of series, each of which is useful for certain purposes.

BOOK REVIEWS

Business Finance

Basic Business Finance: Text and Cases. By PEARSON HUNT, C. M. WILLIAMS, and G. DONALDSON. Homewood, Ill.: Irwin, 1958. Pp. xv+911. $7.00.

Basic Business Finance, as indicated by the title, is designed for a first course in finance. It is essentially an adaptation of the case method used in the Graduate School of Business Administration at Harvard University to instruction at a lower level. Much that teachers have usually found in textbooks written at this level has been omitted, and the order of presentation is so different from that developed over the last three decades that considerable reorientation may be necessary on the part of instructors using the text and problems for the first time. The authors stress the flexibility of their presentation as to its adaptability to various methods of utilization. A careful reading of the text will quickly confirm this assertion. In fact, there are so many possibilities that the user may have difficulty in deciding just how to proceed. In this matter, the authors have helped materially in the Foreword found in the teacher's *Manual* which is available to those adopting the text for use in their classes.

No cases are encountered until the end of chapter 11. At that point, twenty-two cases are inserted, all related to the foregoing chapters and arranged in sequence so that discussion and assignment to students may be made as the study progresses through the eleven chapters. For want of better nomenclature, we may consider the discussion in these chapters as largely concerned with financing current assets. There is much more here, however, than a mere treatment of sources and uses of short-term funds. In order that the student may at the very beginning gain some appreciation of the management and financing problems involved, the first four chapters consider the investment in inventory, cash on hand, accounts receivable, and the commitment of funds to property and equipment so that the relationship and flow of funds in and out of these investments may be understood. A chapter on interpreting financial statements, including a discussion of ratios and source and use of funds analysis, is included also by way of preparation for the chapters immediately succeeding, which now logically lead from the forecasting of the need for funds to the problems of raising short-term funds by means of bank loans, trade credit, and other sources, and the administration of such funds when so obtained.

Should the instructor believe it desirable that his students first become more intimately acquainted with the legal structure of the corporation, its place in our economy, and the basic security types, he could begin at chapter 12 and, after completing chapter 15 and the appropriate problems, take up the preceding chapters. Discussion of security types does not attempt, as do most corporation texts, to define all the many types of corporate securities but rather emphasizes features which may characterize security issues and possible reasons for including them as part of the contract. This is a refreshing treatment because, as these features are studied, the problems involved in building and maintaining a flexible as well as a balanced capital structure are made clear. Nevertheless, considering that this is intended to be a basic text, one could well be concerned

as to whether the house can be built without a more detailed knowledge of the tools to be used. Where may the student acquire this knowledge, if not in a basic finance text?

Capital budgeting and the wisdom of expansion of the business investment are followed by a detailed examination of the sources of long-term capital and the means of tapping such sources, which again makes it possible for the authors to show how the various features of different securities may be adapted to the desires of investors and the facilitation of the raising of funds. The impact of government regulation upon financial structures and the marketing of securities is briefly but adequately handled, considering the over-all objectives of the text. Probably because matters concerning income management and dividends have, of necessity, formed part of previous discussions and problems, only a brief treatment is found here. Refunding and recapitalization, mergers, and the subject of failures and reorganizations, respectively, form separate chapters. The treatment is quite brief and to your reviewer not adequate, considering the technical nature of the subjects. There just seems to be not enough detail to give the student an adequate grasp of the subject or ability to handle some of the problems without considerable help from the instructor. True, many contemporary texts seem to go too far in the opposite direction, but here more explanatory detail would seem to be required. Almost as an afterthought, the text closes with a chapter on financing the new enterprise, probably because previous discussions are concerned with growing concerns and the subject of promotion so often found in other texts is not covered. Following the last chapter are eighteen cases related to subjects covered by chapters 12–27.

It may be gathered that this review is favorable. It is not a text, however, that an instructor should adopt without deliberation. Careful study and preparation are needed on the part of teachers if it is to be used effectively. Some supplementary reading assignments may be necessary. Its flexibility is such that it can be adapted to varying requirements, provided that the user plans his course well.

ANNE E. HULSE

Hunter College

Share Price Indices in Australia. By D. McL. LAMBERTON. Sydney, Australia: Law Book Co. of Australasia Pty, Ltd., 1958. Pp. x+114. 42*s*.

This book presents the theory and application of a new series of monthly security price indexes of stocks listed on the Sydney, Australia, Stock Exchange. A first glance at the title will be misleading if the prospective reader surmises that the subject matter is of limited, specialized interest. This is not the case. While the basic data derive from the Australian economy, the theory and method are applicable to other situations and therefore will interest any student of stock prices and economic change. The book first discusses the general problem of security price measurement and then presents the reasoning that leads to the choice of its particular method of measurement. Finally, some unsolved problems are outlined.

The index measurement of stock prices begins in 1936 and is currently being carried forward by the Research and Statistical Bureau of the Sydney Stock Exchange. The Appendix lists for the period 1936 through 1937: (1) a monthly national security price index combining all stocks listed on the Sydney Exchange

and (2) a breakdown of this index by basic industries. Work is in progress carrying the series back to 1875 from the 1936 base.

The theoretical background in chapters 2 through 4, includes (1) a description of the importance of capital investment and share prices in the Australian economy, (2) a valuable discussion of influences determining stock prices and the cost of capital, and (3) the probable effect of stock price fluctuations on capital formation.

Next, the formula to be used in index calculations is developed and the reasoning clearly set forth. The formula itself follows the Yule-Mitchell-King approach of finding an index to answer a specific question rather than the Irving Fisher philosophy of developing an "ideal" index. The measure itself is basically the easily recognized chain index, but it is adjusted to reflect changes in capital structures taking place during each period.

Two things need to be said concerning this interesting book—one a minor criticism and the other a word of caution. The point is made that an index is chosen to answer a specific question; while the question is strongly implied, it is never specifically stated. Second, care needs to be used if the book's security indexes are to be compared to the widely used and differently derived American security price averages.

This book is valuable in several ways. First, chapters 2 and 3 present a succinct discussion of the forces determining security prices, and the footnotes of these chapters can provide a wide-ranging bibliography from Australian, American, and British sources. Second, the long time span of index numbers should be useful in business-cycle analysis. Third, the reasoning that leads to selection of this particular formula can be used as a guide in the solution of similar problems. In short, this book should command the attention of all students interested in security prices and economic change.

JOHN A. GRISWOLD

Dartmouth College

Quasi-Reorganization. By JAMES S. SCHINDLER. Ann Arbor, Mich.: University of Michigan Bureau of Business Research, 1958. Pp. ix+176. $5.00.

This small lithoprinted volume undertakes (1) to trace the evolution of the quasi-reorganization concept; (2) to analyze and contrast the past and present attitudes of the American Institute of Certified Public Accountants, the American Accounting Association, the courts, and the SEC toward the theory and practice of quasi-reorganization; (3) to evaluate the possible use of this device as a means of providing a revised basis of accountability in those situations in which the accounts as maintained on a historical cost basis no longer provide significant data for accounting reports.

The quasi-reorganization is generally recognized as a departure from a cost basis included in the body of "generally accepted accounting principles" only in so-called "trouble cases," i.e., where write-downs are required. The author proposes that a general quasi-reorganization procedure should become a recognized departure from a cost basis not only for downward adjustments but also for upward adjustments. He believes, however, that this should be delayed until there is agreement among accountants, regulatory agencies, and other interested parties concerning procedures and standards. He does not, apparently, believe that it is necessary to wait until these changes are approved for tax purposes.

The author has proposed certain standards and procedures which he thinks would constitute a soundly based quasi-reorganization procedure. These suggestions seem to be theoretically defensible, although one or two of them are perhaps a little less than practical. By definition, a quasi-reorganization cannot alter creditor's rights. Nevertheless, it is proposed that both current and long-term liabilities be restated "with the current level of interest rates and the borrowings of firms in similar financial condition in the same industry or an industry having similar credit risks." This would necessitate the setting-up of a balance-sheet item of implied debt discount or premium and the subsequent amortization of this item to income. This proposal is not at all indefensible, but it might be difficult to explain to a tax-writing congressional committee.

It now seems clear that the accounting postulate of a monetary unit of stable value is obsolete. But departure from this ancient concept is difficult because of a lack of agreement on a precise methodology and because of the "cultural lag" of tax and regulatory authorities. While the author is concerned primarily with the quasi-reorganization as a means of adjusting balance-sheet values and reported income to an inflationary price level, there is brief mention and discussion of some of the other alternatives to the historical cost basis. He recognizes that the method reviewed is a one-time, "single-shot" solution and would not be altogether useful in the event of continuing inflation. He suggests that if the proposed mehod is adopted, it might be well to provide for some widespread simultaneous adjustment by an industry or even by business in general.

The book is an extremely useful and timely study in an important area of theory and policy. This is not because Schindler makes an especially good case for quasi-reorganization as a means of an ultimate departure from the historical cost basis. He has not attempted the role of the crusader and specifically recognizes some of the weaknesses of this alternative. It is a valuable contribution primarily because it brings together, perhaps for the first time, a critical and discerning review of this relatively new concept and a summary of the attitudes toward the quasi-reorganization of the principal agencies that have to do with the determination of "generally accepted accounting principles."

It would have been helpful if the book had included some discussion of foreign experience in the restatement of accounting data to reflect inflationary price levels. Less than a page is devoted to a general statement that the tax laws of many foreign countries permit depreciation charges on the basis of adjusted asset values and reference to a Belgian law of 1947. But the omission is understandable, since this is a subject worthy of separate study.

The book is a condensation of the author's doctoral dissertation in the University of Michigan. Unfortunately, it reads a bit like a thesis abstract.

O. K. Burrell

University of Oregon

Consumer Finance

Buy or Rent? By William I. Greenwald. New York: Twayne Publishers, 1958. Pp. 91. $3.00.

The difficult economic position in which many homeowners find themselves in this recession points to the urgency for widespread consideration of what the author says about ability to afford and carry a home and his cogent discussion

of the comparative disadvantages and advantages of homeownership and renting.

It is questionable, however, whether this book will serve adequately to disseminate this information. It cannot be used readily as a handy reference for those considering the purchase of a home for the following reasons. First, information is not easily found because of an inadequate index and insufficient topic or paragraph headings. Second, information is difficult for the layman to understand because of insufficient explanation and definition of terms. Also it makes some relatively simple ideas appear to be complex. For example, when the author discusses the purchasing power of the down payment in terms of the formula, 1/Downpayment ÷ price, all he is saying is that the smaller the percentage of down payment to purchase price, the more housing the buyer is obtaining with his initial investment. His discussion of the relation of the purchasing power of the down payment to the loan ratio is also couched in unnecessary complexities. Third, statements are often made without clear substantiation. For example, the author says that co-operative housing "seeks to adopt the best features of both renting and owning," but he does not specifically tell why this statement is true. Again he does not explain the reason for affirming that "the danger of a larger equity loss with price deflation is increased" by a large down payment. Those considering homeownership might do as well to use the 10-cent pamphlet, *Money Management—Your Shelter Dollar,* published by Household Finance Corporation as a reference.

It is doubtful whether this book could be used effectively as supplementary reading for students in college courses in personal finance and housing. First, its style tends to deaden interest instead of conveying some of the vitality of its very exciting subject. Second, it contains little information that is not found in such personal finance textbooks as those written by Arthur W. Hanson and Jerome B. Cohen, J. K. Lasser and Sylvia Porter, or Arch W. Troelstrup. In fact, it leaves out some of the valuable points on housing which these books present.

The best feature of the book is its discussion of the capital, operating, and imputed costs of homeownership and its demonstration that the idea of homeownership is cheaper than renting is highly fallacious. A special contribution is found in the discussion of imputed costs and in the charts on "Aggregate Payments Made for Mortgage Loan of $1,000" at varying rates of interest and with varying durations and the chart of "Average Monthly Costs of a $10,000 House."

HELEN C. POTTER

Loyola University, Chicago

Make Your Income Count. By DONALD ROGERS. New York: Henry Holt & Co., 1958. Pp. 216. $3.95.

According to Mr. Rogers, this book was written "to help restore fundamentals of money management and outline the discipline necessary to achieve individual self-acquired security." It stems from the author's "being appalled at the economic ignorance of our young adults," especially in their personal activities.

This text presents in "popular" style topics found in standard personal finance textbooks. Buying life insurance, purchasing a house, inflation, common stocks, mutual funds, borrowing, budgeting, and retirement are a few of the twenty-seven topics covered.

Beginning with the premise that most of us *know* about thrift but few *do* anything about it, the author suggests making savings a regular charge against income. He suggests forgetting the *total* saved and concentrating on the *regularity*.

Life insurance is suggested as "probably the cheapest and easiest form of savings." Despite the reviewer's strong belief in this institution, this statement is subject to questioning on the grounds that there are currently many other saving institutions which can afford the same degree of safety and the same or higher rate of return.

Even though the nature of Mr. Rogers' text is meant to be general, several of his statements on life insurance tend to be misleading. For example, in his description and examination of term insurance he states that "at the end of that time [end of the policy term] your protection stops." This is true, but in all fairness some mention of convertible term insurance should have been made at this point. Also, reference to the non-forfeiture values as being left in "the fine print" of every policy is untrue. Life insurance companies use the same size type to inform their policyholders of their rights as they do of their duties.

With over 121 million people protected by hospitalization insurance alone, the importance of health insurance is underemphasized. In his discussion of this vitally important subject, the author's facts are sometimes inaccurate. For example, Blue Cross, not Blue Shield, is the large mutual organization writing hospitalization insurance. Mr. Rogers did not fully explore the reasons why disability insurance is a separate contract. The emphasis he gives the phrase "tricky term clause" and the admonition "Caveat emptor" is unwarranted in today's modern insurance industry.

Common stocks are cited as good hedges against inflation, and capital gains are made the primary reason for purchasing these securities. In a brief chapter entitled "Ways You Are Protected" the author fortifies his thesis that commons are good buys at this time by a description of industry and government safeguards. Considerable emphasis is given to the selection of mutual funds as an investment vehicle for the individual.

Some of the mystery in opening a brokerage account is explained. The over-the-counter-market, puts, calls, shorts, and warrants are sketchily described. The chapter on "The Cheapest Way To Borrow" contains comparisons of the qualifications and charges for borrowing. The following chapter discusses the perennial question of whether to buy a new or a used car.

The chapter on budgeting is far too sketchy to be useful. Since the text deals with making your income "count," a system of budgeting should have been fully explained. The concluding chapters on how to retire, retirement income, and how to invest after retirement are chapters which bring to the fore many questions which should be answered long before retirement.

This book contains useful information for the conduct of one's personal finances and should prove helpful to the layman. As could be said for all "popular" books explaining technical subjects, the book becomes sketchy and, as a result, sometimes misleading. The book would have been more valuable had it contained a bibliography after each chapter which the reader might use to explore each subject further.

DANIEL P. KEDZIE

Continental Casualty Company
Chicago

Insurance

Compulsory Temporary Disability Insurance in the United States. By GRANT M. OSBORN. Homewood, Ill.: Irwin, 1958. Pp. xx+232. $5.00.

This volume, the first published book-length treatment of the newest form of American social insurance, undertakes to provide the reader with a discussion of the hazard involved and private attempts to cover it, a description of the four relevant state laws, and an analysis of the operation of the state programs. This is an ambitious undertaking, and it is likely that for some time to come those seeking knowledge in this area will be dependent upon this book as the one seemingly comprehensive compilation. It is to be regretted, therefore, that the book was not written in a more interesting style and that its description and analyses of the state programs are not without error.

The first 85 pages of the book are devoted to a description of the temporary disability insurance laws, their historical background, and the nature of the hazard involved. The purpose of these pages was to provide the background necessary to understand the analyses to follow. In many ways, this objective is achieved, but there are omissions of material which become important for understanding the later analyses, repetitive treatment of quite simple concepts, and an avoidance of certain complex subjects.

These shortcomings are insignificant compared to those contained in the remaining four chapters of the book, where the author analyzes some of the problem areas in the compulsory state programs. At points in these chapters, Professor Osborn reaches conclusions which are more sweeping than his data warrant, at others his statements are either inaccurate or inconsistent, and at still others he omits vital considerations.

An example of a conclusion unwarranted by the data presented appears on page 133:

> Employee contributions to unemployment compensation greatly influenced the decision to finance in the same way the first three state disability plans. Since Alabama is the only state currently requiring such an unemployment compensation contribution, future legislation will not be influenced by this factor. For this reason, it is probable that an equal sharing of costs by employees and employers will be provided in future state disability plans.

The adequacy of the basis for the conclusion reached in the second sentence of this paragraph is somewhat dubious, but the conclusion reached in the third sentence is clearly unsupported by the reasons given.

Inaccuracies and inconsistencies are painfully numerous. In footnote 24 on page 105 we are told that private plans pay benefits higher than the statutory benefits paid by the state plan in California because the 1 per cent contribution rate is "in excess of that needed to pay statutory benefits." On the next page, in footnote 26, however, the author tells us that the law *requires* that private plan benefits be more generous than statutory benefits. Another example of contradictory statements can be found by comparing pages 191 and 203. On the former page we are told that adverse selection is a problem "common to all systems," including an exclusive state fund. On the latter page we are told that the problem of adverse selection arises only when private plans are permitted to compete with the state fund.

The topic of adverse selection also provides an example of the omission of vital considerations. Although Osborn properly indicates in chapter 1 that the incidence of temporary disability varies with the age, income, and occupational

distribution of the population, as well as its sex distribution, he restricts his analysis of adverse selection in chapter 10 to simply the last item. Consequently, his discussion of adverse selection is inadequate for an understanding of the problem or of the extent of possible subsidization of private insurers in those states in which they compete with state plans.

An omission of equal gravity is involved in the discussion of the early financial difficulties of the Rhode Island program. This discussion, on page 140 and beyond, implies that these difficulties arose solely because of the payment of unlimited pregnancy benefits and because of the unrestricted payment of dual benefits with workmen's compensation. A complete analysis of these difficulties should have included mention of the fact that the use of a remote base period obligated the program to pay benefits to workers who had left the labor force and required the payment of benefits on the basis of high wartime earnings while contributions were based on postwar earnings that were usually lower.

One last example of a significant omission is the fact that nowhere in the book does Osborn mention that a state disability program co-ordinated with unemployment compensation need pay only the marginal costs of its operation, while state programs that co-ordinate with workmen's compensation must pay their total costs. This omission is particularly significant because the author advocates co-ordination with workmen's compensation.

This reviewer regrets that a well-conceived outline could not have been turned into a book that would warrant recommendation without qualification.

MONROE NEWMAN

Pennsylvania State University

Group Disability Insurance. By JESSE P. PICKRELL. Homewood, Ill.: Irwin, 1958. Pp. xxii+255. $5.00.

This book is in keeping with what appears to be the current practice of the insurance faculty at the University of Pennsylvania to encourage the preparation of textbooks in void areas by accepting them for the Ph.D. thesis in economics in lieu of original scholarly research.

This review, therefore, must measure the adequacy of the book as a "comprehensive source of information on the broad outlines of group disability insurance principles and practices." To review it as an authentic Ph.D. thesis would be unfair to the author, for his assigned task was to complete "the trilogy on group insurance envisioned by" the S. S. Huebner Foundation for Insurance Education. Unfortunately, it was not one of advancing a proposition and maintaining it by argument. In truth, the author offers nothing new which needs defending, and, in fact, he does not offer originality even in the organization, for he had to follow closely the organization of a predecessor book on group life insurance. But this is no criticism of the author, for he had to conform to a pattern already set up for him.

This well-written volume using a traditional approach provides a good over-all survey of the field. Opening with a discussion of the nature and types of group disability insurance, the book moves quickly into an explanation of the features of the master contract and describes the insuring clauses for each type of coverage: weekly indemnity, accidental death and dismemberment, hospital expense, surgical expense, dread diseases, and medical expense.

Next the author discusses state and federal disability legislation. Only seventeen pages are devoted to this important subject, so, at best, the chapter is a recital of existing laws and proposals. The problems associated with sales and administration of group disability insurance are given the next thirty-five pages, most of which are descriptive in nature. Rates and rate regulation, underwriting rules and procedures, and the reserve accounts come in for treatment in the latter part of the book. The discussion in these chapters is par for the course.

The book makes a graceful exit with a chapter entitled "Evaluation of Group Disability Insurance" in which the author (1) examines the growth of the business in terms of premium volume and numbers of persons covered, (2) points out the importance of major medical insurance as a means of eliminating the shortcomings of restricted coverages and low limits, and (3) discusses the problems of providing medical care for older persons. On this last point, the author passed up an opportunity to make a real contribution to insurance thought. Instead, he contented himself with suggestions on areas of original research needed to help devise a solution to the problem but assiduously avoided the research himself.

All this is not to say that the author did not accomplish his assigned task. He did just that, and this review should not be taken as being critical of him. He did well what he was allowed to do. But two things do seem strange to this reviewer: (1) that a graduate student is allowed to submit a textbook as a Ph.D. thesis and (2) that the subject of group insurance (life, disability, and retirement) is handled separately in three different volumes rather than integrated into one, especially since the trilogy was planned in advance. An integrated approach would eliminate much duplication and confusion and present the picture of employee benefit plans in their proper perspective. And all of this with economy too!

ROBERT I. MEHR

University of Illinois

International Finance

The International Economy. By P. T. ELLSWORTH. Rev. ed. New York: Macmillan, 1958. Pp. xi+513. $6.75.

Eight years ago Professor P. T. Ellsworth published *The International Economy: Its Structure and Operations*—a revised edition of *International Economics* that he had issued in 1938. In the prefatory and introductory sections to the volume he told the reasons for the revision: It "was stimulated by difficulties experienced in teaching the field of international economics along the traditional lines of a separate study of theory and its application to policy." Such approach was "too narrow and too technical," and students consequently did not acquire an adequate appreciation of the complexities of international economic problems. Far more attention needed to be paid to "the conditioning environment in which economic forces operate." And the author expressed hope that, by combining history, analysis, and factual data, the book "will give a realistic picture of the development of the international economy and of its current structure and operation." Indeed, despite some notable deficiencies and gaps, it was probably the most interesting and instructive text, enjoyed widely by university teachers and students.

Now Ellsworth offers us a completely and thoroughly revised version of *The International Economy* (present title)—in which "Less than ten per cent of the earlier edition has been retained without substantial change"—with this explanation: "The passage of time and of the changes that come with it required that the chapters dealing with postwar events be brought up to date. More important than this matter of currency, however, was my own dissatisfaction with the 1950 volume. I became convinced that it could be greatly improved by condensing the historical sections and by making more coherent and systematic those concerned with theoretical analysis." Thus in the two decades since the publication of his *International Economics* Ellsworth has come full circle with the present revision.

The title of the book is misleading, however. It is not, as might be expected, a study of the institutional and operational aspects of the international economy. Rather, it is a survey of the theoretical principles that determine international specialization, trade, and balance-of-payments adjustments, with some consideration of the changes in the social and economic setting within which these principles have operated. As such, it is very welcome. It makes a good and useful text for a course in theory of international trade and finance, particularly as the theoretical formulation throughout is careful and systematic and the volume is ably and concisely written.

But, in the opinion of this reviewer at least, the emphasis of theory makes the book unsuitable as a general introduction to the present-day international economy. Moreover, the book suffers from a parochial conception of "the international economy" in that it is limited to the United States and western Europe. The role of the Soviet Union, its satellites, and of Communist China in the international economy is completely disregarded. And the discussion of the complex problems of promoting economic growth in the economically underdeveloped countries is highly inadequate, a short chapter of some twenty-five pages being devoted to it.

There is real need for a comprehensive and up-to-date text if American university students are to acquire an adequate understanding of the structure, organization, and operation of the international economy. The reviewer hopes that one will be written—perhaps by Professor Ellsworth.

ARTHUR LEON HORNIKER

Washington, D.C.

Economic Development. By CHARLES P. KINDLEBERGER. New York: McGraw-Hill, 1958. Pp. xiii+325. $6.50.

Recent events in Peru and Venezuela raised the questions whether our flag and our Vice-President were insulted because we bought less from these underdeveloped countries, owing to our recession, or because they felt that other countries received more of our economic aid. Should we increase our aid anytime we are insulted? Should we increase our aid in the face of a budget deficit? Should we cut our aid and give our own citizens a tax cut and thereby restore our prosperity and our ability to buy raw materials from these countries? What does our recession do to the fiscal and monetary policies of these countries? Does economic, fiscal, and monetary chaos there inevitably result from any recession here, and, by affecting our exports, does it in turn make for more unemployment here?

Aside from moral or political reasons, should we help the less developed countries with money, with engineers, or with advice? What kind of advice? Should strings be attached to loans?

To answer these and many other questions that baffle us, Kindleberger has written a most admirably balanced survey of the main problems of economic development. Food and mineral resources, labor skill, capital, technology, business know-how, entrepreneurial spirit, scale of market, a price system or governmental planning, and a balance between sectors, industries, and regions are only the first factors and policies to be analyzed. How can capital formation be stimulated? By high or low wages, high or low profits, stable prices or inflation, and borrowing abroad or at home? Kindleberger's over-all appraisal is rather eclectic: "Everything has happened and everything can happen; everything is more complicated than most people think." No patent medicines are offered, but there is no treatise available that probes more deeply and comes up with a better-balanced discussion of the problems.

The readers of this review are perhaps most interested in chapter 11, "Active or Passive Monetary and Fiscal Policies." Some kinds of inflation may be salubrious, others noxious. Profit inflation, perhaps stimulated by bank credit to private entrepreneurs introducing new goods, may provide rapid growth through private capital formation and use of tax revenues. Cost-of-living inflation (wage-push) will squeeze profits, capital formation, and, finally, also the growth of consumption. But there have been cases when deficit spending created capital formation, if price control and rationing were used to prevent inflation from becoming cumulative. During World War II, it was used most effectively in this country to mobilize all our resources. Russia has lifted herself by her own bootstraps; and, from 1945 to 1952, Brazil's private investment borrowed heavily from banks, resulting in an expansion of the money supply, rising profits, productivity, and prices. After 1952, however, speculative investment, bottlenecks in production, and social tensions arising from wages lagging behind prices blocked further real expansion.

Tax systems have to be developed with a view to equity, ability to pay, administrative convenience, and feasibility of collection as well, for stimulating economic growth. Real estate and consumption taxes are favored, with less emphasis on profit taxes and then only if hedged with provisions for accelerated depreciation on new investment.

Kindleberger concludes that "an underdeveloped country with luck or virtue can avoid inflation; but it needs more of either or both than a developed country. To try to push its luck or risk its virtue in positive (monetary or fiscal) programs of accelerating development through a disequilibrium system is likely to end in disaster."

Because the author is so careful and fair in his analysis of events, policies, or theories, one cannot well argue against him on any count; one can only admire and be grateful for a highly scholarly contribution.

ROBERT M. WEIDENHAMMER

University of Pittsburgh

The Bank for International Settlements. By HENRY C. SCHLOSS. Amsterdam: North-Holland Publishing Co., 1958. Pp. xi+184. Guilders 15.00; $4.00.

When, in July, 1944, the Bretton Woods Conference met to discuss the proposals for the "Fund" and the "Bank," it passed a resolution calling for liquidation of the BIS at the earliest possible moment. But for the fiscal year ending March 31, 1957, the turnover of the banking department of the BIS was 45.4 billion Swiss gold francs as compared with 200 million ten years previously and a prewar peak of 4 billion.

What brought this bank for central banks into being, what has it accomplished since 1930, and why is it stronger today than ever before? The BIS was conceived as part of the Young Plan for the solution of the transfer problems inherent in the reparations payable by Germany. But, in addition to collecting payments from Germany and distributing them to countries entitled to receive them, the BIS also was to foster international monetary stability by promoting closer co-operation among central banks. The Federal Reserve System, however, never participated in this co-operation, and it was three private United States Banks (J. P. Morgan, First National Bank of New York, and First National Bank of Chicago) which, in 1930, bought a number of shares equal to those acquired by the central banks of England, France, Italy, Germany, and Japan, while smaller participations were taken by a number of other countries.

The demise of the three Baltic republics by Russian occupation and the withdrawal of Japan in 1952 have been the bank's only losses of membership since 1930. (The author fails to explain why certain private United States banks rather than the Federal joined, whether they are still members today, and what happened to the stockholdings of the Baltic republics; none of these three unfortunate little countries is even mentioned in the index.)

The more than tenfold growth in deposit turnover of the BIS since World War II has been a reflection of the reascendency of central banking in its competition with treasury policies. The member countries of the International Monetary Fund are represented through their treasuries and not their central banks. It appears that the IMF has been under the handicap of finding the treasuries being unwilling to surrender interests of national sovereignty to such an extent as to assure the kind of co-operation that has been practiced by the members of the BIS. The rebirth of faith in monetary policies and in return to some system of complete multilateral convertibility as advocated by the BIS, at least on a regional (European) basis, may become an integral part of the concept of the European Market.

As a mere footnote on history, we might recall that the original objective of the BIS was to handle reparations and that its location at Basle was literally a last choice: The British voted for London, with Amsterdam as a second choice; the French, for Paris or Brussels; and the Germans, for Amsterdam or Zurich. A Swiss city was suggested as a compromise. The French voted for Lausanne or Geneva, but the British felt Lausanne was too French and Geneva was too much under the influence of the League of Nations, while Berne was too close to the diplomatic corps. Basle then remained the only Swiss city of any size.

The author has done a good job of tracing the useful functions and the inherent limitations of the BIS as an international financial agency. He also throws a searchlight into many dark (and forgotten?) corners of Europe's stormy financial history between 1930 and 1957. His conclusions are guarded but sympathetic toward the record and possible future role of the Bank for International Settlements.

ROBERT M. WEIDENHAMMER

University of Pittsburgh

Introduction to International Economics. By DELBERT A. SNIDER. Rev. ed. Homewood, Ill.: Irwin, 1958. Pp. xix+598. $7.00.

In his review of the first edition of this book, Henry C. Murphy said: "Within the limits which [Snider] has set for himself, he has been remarkably successful in explaining difficult matters simply; he does not gloss over or avoid them. This reviewer can unqualifiedly recommend the book for the purpose for which it was written."[1] From his own experience with the book and his examination of this second edition, the present reviewer can readily second this statement. The book has proved to be an effective teaching tool. It is readable and clear. The questions at the end of each chapter make good subjects for weekly written assignments to encourage student mastery of the material.

The second edition contains five new chapters, and new material has been introduced into several of the others, mainly for the purpose of including more "discussion of current international economic problems." The additions are pertinent and well chosen. Chapter 2 is a convenient summary of data on the magnitude and significance of world trade. Chapters 18 and 19 conclude the section on balance-of-payments adjustment with a discussion of progress and problems in restoring convertibility and multilateralism. Chapter 22 makes clear the lack of correspondence between stated United States policy to promote freer trade and the record of legistlative action in this direction. Chapter 28 supplements the section on stability and growth through co-operation by presenting technical assistance alongside the activities of the lending agencies.

All these changes have added 125 pages to the first edition. Nevertheless, the book is suitable for use in a one-semester course, and should continue to find widespread acceptance by faculty and students alike.

SAMUEL E. BRADEN

1. *Journal of Finance,* IX, No. 4 (December, 1954), 441–42.

Investments

American Investment in British Manufacturing Industry. By JOHN H. DUNNING. London: George Allen & Unwin, 1958; distributed by Essential Books, Fair Lawn, N.J. Pp. 365. $6.30.

To the best of the reviewer's knowledge, this book is the first comprehensive analysis of the scope of American corporate investment in the British manufacturing industry. It is a product of a three-year research project by an English economist into the nature, extent, and economic significance of United States direct participation in British industry. It is based on a study of over 200 Anglo-American manufacturing companies and the United States subsidiaries in Britain.

Of necessity, the analysis is essentially descriptive rather than analytical, and the character of the survey is extensive rather than intensive. The conclusions, too, are basically qualitative rather than quantitative. Nevertheless, it is a book well worth reading and one which makes a major contribution to our basic economic literature.

The topics covered include the nature and historical development of American investment in British industry, the comparative productivity of United States parent and branch plants, the impact of American research and technology on industrial progress and production techniques of the United Kingdom, man-

agerial practices of United States subsidiaries, the relationship of United States direct investment to Britain's external trade balance and the dollar shortage, and the over-all effects and future prospects of the United States investment in the United Kingdom. Finally, there is a statistical summary.

Investment by American business interests in British manufacturing exceeds $1.2 billion and is increasing at an annual rate of over 10 per cent. More than 300 United States branch subsidiaries and jointly financed Anglo-American concerns furnish employment to approximately 350,000 persons and produce a wide range of consumer and capital goods. In 1956 these firms sold over $2.3 billion in merchandise, and their exports amounted to 10 per cent of total British manufacturing exports. Each year the parent companies of these concerns spend more on research and development than the whole of British private industry combined.

Direct American capital investment in British manufacturing carries with it improved technology, efficient production and sales methods, patents, management know-how, skilled personnel, and fresh ideas from which Britain is bound to achieve higher productivity in her own right. American-designed products have helped raise the level of British industrial efficiency. Moreover, American capital investment has had a favorable effect upon the competitive structure of British industry. At the same time, new sales outlets for American merchandise have been found. Thus the economic welfare of both nations has been furthered.

The book was not written to prove any preconceived ideas or to serve as a practical guide to the problems confronting American businessmen overseas. The purpose was to assess the role of American-financed firms in the British economy and their contribution to the industrial development and economic welfare of the United Kingdom. To avoid the dangers of superficial reasoning and generality of approach, the author has corroborated his arguments and conclusions with numerous concrete case studies. The book is well and interestingly written and well documented.

The author hopes that the book will bring about a greater realization in both nations of the mutual benefits which properly planned Anglo-American investment may bring to both countries. He argues that the economic prosperity of the two nations is inseparably linked together and that their economies are more complementary than competitive. He concludes that in the exploitation of this relationship and the mutual gains which follow, United States corporate investment in Britain has an indispensable role to play.

ERVIN K. ZINGLER

University of Houston

Income Growth with Security: The Formula-Plan Solution. By SHERMAN F. FEYLER. New York: Macmillan, 1958. Pp. xviii+189. $4.95.

Professor Feyler, a member of the faculty at the University of Buffalo, School of Business Administration, has written a brief, well-organized, and clear book about formula plans as a technique for investment in securities. In the course of his examination, the author outlines the underlying reasons for the formula-plan approach to the timing problem, as well as the various kinds of plans that have been formulated.

Formula planning rests on four fundamental presumptions: (1) that stock

prices will continue to fluctuate; (2) that the individual securities comprising the stock portion of the formula-plan portfolio will tend to move in close correlation with the movements of the entire stock market or with some widely recognized index; (3) that stocks, when bought under a formula plan on a scale-down, do not ultimately become worthless or fall to a nominal level from which no appreciable recovery takes place; and (4) that when stock prices are undergoing violent fluctuations, it is practically impossible for the average individual to disassociate emotion from sound judgment.

In some detail, Dr. Feyler has set forth the principles of equalization and variable-ratio plans in general, with comment on specific plans, such as that of Yale University and Oberlin, the du Pont Institutional Plan, the Keystone Seven-Step Plan, the Birmingham Plan, Benjamin Graham's Central Value Plan, and a number of others. There are also chapters on formula planning for the small investor, on dollar averaging, the Monthly Investment Plan of Members of the New York Stock Exchange. Prior to the concluding chapter, the pitfalls of formula planning are described. The book contains a bibliography and an index.

This reviewer must confess that he found the author most persuasive in his discussion of pitfalls of formula planning. Dr. Feyler obviously believes in the basic principles of formula-timing; yet he is fair and perceptive enough to recognize the significant shortcomings and defects of the various plans.

To begin with, every plan, as pointed out in earlier studies, involves some forecasting. That plans formulated by able groups have been abandoned or substantially modified (Yale, Vassar, and Oberlin) within a relatively short period is noteworthy. The investment companies using formula planning have not consistently outshone those relying on less "scientific" methods.

The economic patterns simply refuse to repeat themselves, and other factors may influence the markets. Only a short time ago "defensive" and "aggressive" types of securities both fell sharply in the same period, contrary to the sequence assumed. If the framework of the new economy and government policy succeeds in eliminating major depressions, the cyclical approach loses much of its validity.

It is hard to understand how the author, who has had some experience in the securities business, can make the statements: "To rely on growth stocks, one must recognize and buy the common stock of a growth company before it has started to grow rapidly" (p. 12). And again, on page 13: "But one thing seems to stand out, one thing that all these companies have in common: each can show a proven record of substantial underlying expansion in per-share earnings as well as the prospect for the future of a more rapid expansion in sales and income than the average corporation." First, there is an obvious inconsistency in these statements. Further, many of the leading "growth" stocks could have been bought probably long after the company started to grow rapidly. And, in addition, the prices of many "growth" stocks have continued their "growth" without any corresponding rise in per share earnings but rather because of a more liberal capitalization of earnings by investors and the reluctance to sell.

This brings me to the final point: portfolios of unusually successful investors show that few have followed formula-planning methods. More frequently they found a good situation and have "latched on" to it, regardless of changes in credit policy, the political environment, or the phases of the business cycle. In other words, having bought a proprietary interest in a business enterprise which they believed sound and well managed, they have been willing to "live with it."

Too often, other approaches seem singularly like intellectual exercises not too closely related to realities.

R. L. WEISSMAN

New York City

Corporate Bond Quality and Investor Experience. By W. BRADDOCK HICKMAN. Princeton: Princeton University Press, 1958. Pp. xxix+536. $10.00.

This excellent report of investor experience with corporate bonds offered publicly during the period of 1900 to 1943 will undoubtedly prove to be a landmark in the field of investments. Although bond investor experience would seem an excellent subject for detailed statistical investigation and analysis, since there is wide and important interest and an availability of statistical data, very few comprehensive analyses have been undertaken, largely because of the size of the task involved in compiling and working with the great mass of data that must be processed to obtain valid conclusions. The present study is based largely on data compiled by a project of the Work Projects Administration and subsequently extended by the National Bureau of Economic Research. The present project was initiated in 1946, with the aid of a number of grants and the cooperation of a number of organizations. It is unique in its comprehensiveness of data and thoroughness of analysis.

The report analyzes the comparative experience of holders of various quality corporate bonds according to the following standards: as originally appraised by the major statistical services; eligibility for state legal lists; yields at original offering; and specific characteristics directly or indirectly related to bond quality in the prospective sense, such as the margin of safety (ratio of net income to gross income of the companies offering the bonds), the times-charges-earned ratio (ratio of income before fixed charges to charges), the lien position, the size of the issue, and the asset size of the obligor.

Any brief summary of the contents or conclusions of this book must be selective and inadequate. However, with the apology that an indication of contents and conclusions seems called for, the following summarization of conclusions is offered, the contents of the book being devoted in large part to establishment of the facts upon which the conclusions are based:

1. Of $66.5 billion of regular bonds of domestic corporations offered publicly from 1900 to 1944, 13 per cent were paid in full at maturity, 40 per cent were called, 19 per cent were defaulted, and 28 per cent remained in good standing. Results were affected greatly during the period by general business conditions. For example, default rates on bonds offered after 1932 were much lower.

2. Rates of default increased as quality standards decreased. Only 5.9 per cent of the highest-rated bonds went into default, as contrasted with 42.4 per cent of bonds rated in the fourth category. Also, the default rate was only 2.1 per cent for corporate bonds whose companies covered fixed charges at least three times, as contrasted with a default rate of 34.1 per cent for bonds of companies covering fixed charges only between one and one and one-half times.

3. The higher returns offered on low-grade bonds proved more than sufficient, in the aggregate, to offset the higher default losses.

4. Corporate earnings proved to be the most important single factor in selection of bonds. The principal errors of judgment made by the rating services arose from a failure to forecast accurately future industry earnings trends.

5. Mortgage and other secured bonds were defaulted more frequently than unsecured bonds. However, the study shows that holders of secured issues fared impressively better in default than did holders of unsecured obligations.

6. "Legal lists" proved of some value as guides to safer bond investment, but the comparatively high rate of default of railroad bonds, which were widely used in "legal lists," caused many unfortunate results.

This book should prove useful to all persons interested in bond investment and invaluable to all professionals. It contains over 500 pages of factual material, including 116 tables and 36 charts, all designed for the purpose of describing investor experience with corporate bonds.

Limitations of the book arise from the important changes in the circumstances affecting bonds since 1944, final date of the data on which the study is based, such as the constant deterioration of the purchasing power of the dollar, the generally favorable business conditions prevailing over an unusual length of time, the general decrease in yield differentials among various qualities of bonds, and the increased volume of convertible bonds. This time limitation is inherent in the nature of the study, which is based on voluminous data requiring exhaustive analysis and lots of time.

THEODORE S. KLISTON

American University

Money and Banking

The Monetary and Fiscal Policy of India. By K. C. CHACKO. Bombay, India: Vora & Co., 1957. Pp. xiv+386. $4.50.

This book is based on a doctoral dissertation written at New York University. It is a study of India's monetary and fiscal policy from 1939 to the present, with primary emphasis on monetary policy. Less emphasis is placed on fiscal policy because of the recent comprehensive report of the Indian Taxation Commission. The main theme of the book is a discussion of the extent to which a constructive monetary and fiscal policy can help India achieve the goals of its five-year plans and at the same time avoid serious inflation and instability.

Among other topics, the author analyzes the efforts of the Reserve bank to create a "bill" market in India, the effects of growing government debt and the securities market on the liquidity and solvency of commercial banks, and the results of reserve bank policy on the economic growth of the nation. The special activities of the Reserve bank in the field of agricultural finance and the co-operative movement, particularly the low interest rates extended to co-operative banks, are discussed in detail. Special attention is given to efforts to accelerate capital formation in a nation without adequate savings and investment institutions via new financing agencies and the commercial banks.

By way of background for the book, it should be pointed out that India's economic policy is presently in a fluid state. The nation is seeking a new synthesis out of conflicting economic ideologies. The approach to national policy formation is one of "political economy."

The primary goal of monetary policy (p. 299) is held to be the success of the five-year plans for national economic growth and development. Stability and inflation control are lesser goals. Similarly in the field of fiscal policy, the basic aim of taxation (p. 311) is the promotion of production and the achieve-

ment of a less unequal distribution of income and wealth. The direction and extent of public expenditures have major roles to play too. The use of direct and indirect taxes to shift private consumption to public investment is recommended to offset the high marginal propensity to consume of the nation. Economic and price stability, again, are lesser goals.

The author believes that the Indian national policy of cheap money has been achieved more in theory than in practice, especially in view of the prevailing high interest rates. The failure of the Reserve bank to follow a flexible monetary policy (only one change in bank rate in 20 years), particularly in periods of economic downturn, is criticized. The official bank rate has remained at 3½ per cent since the Korean War. Because of continued deficit financing to achieve the five-year plans, the immediate problem of India is serious inflation. Chacko feels that a further increase in bank rate would have no great effect on inflation (p. 301) and urges the imposition of selective and direct credit controls along with increased taxation as the solution. The Reserve bank has its hands tied supporting the government bond market; yet Chacko justifies a low bank rate to keep government interest costs low (p. 356).

In India, borrowing by the government from the public is not considered deficit financing, in that the public's purchasing power is reduced by the amount of the loan. Only government borrowing from the banking system, or monetization of debt, is so considered. It is argued that monetization of debt is the basic means of flexibly adjusting the stock of money to the needs of the growing economy (p. 323) and that, indeed, it is indispensable in an underdeveloped economy. This, if properly done, does not necessarily mean inflation. Prices actually declined during the first five-year plan. Prices, however, have risen sharply since 1957, and the second five-year plan is endangered. Excessive inflation might kill or curtail growth.

While one may not agree with all the author's conclusions, one will find the book very interesting, stimulating, and enlightening.

ERVIN K. ZINGLER

University of Houston

Business Cycles and Economic Growth. By JAMES S. DUESENBERRY. New York: McGraw-Hill, 1958. Pp. xi+341. $6.50.

This book contains stimulating ideas: (1) Fundamental parameters of investment and consumption are the income level and capital intensity. (2) The parameters for housing and commercial construction are somewhat distinct. (3) The "ceiling theory" of business cycles is rejected; multiplier-accelerator interaction is considered unsatisfactory to explain income generation and to indicate unrealistic instability. (4) The marginal efficiency of investment is assigned major importance but as related to capital stocks, technical progress, various input factors, and demand curves rather than to the interest rate. (5) Sustained growth is held possible but to be dependent on outside driving forces. (6) Depressions are explained largely in terms of exogenous factors. (7) Changes in structure tended to reduce both growth and stability in the 1920's. (8) A comprehensive system of income generation is set up, and logical explanations are developed. (9) Realistic factual and institutional understanding is introduced to modify many of the theoretical conclusions.

Questioning of the great instability implied by the now classic multiplier-accelerator models is of major importance. The type of fluctuations which have occurred in most of our business-cycle history appear more characteristic than the literature appeared to imply a few years ago.

The questioning of repetitive cyclical mechanisms appears to be particularly useful when dealing with housing cycles. The housing industry is held not to have produced housing depressions of any magnitude through its own dynamic mechanism.

These achievements are perhaps all we should ask of any book, but frankly the reviewer is troubled by several factors. Explanatory variables are stated rather rigidly, but frequently they may be open to question. For instance, growth of households formed by unrelated individuals and growth in non-housekeeping facilities are not noted, but they would appear to contribute to the explanation of housing investment.

Although the equilibrium rate of growth is implicitly defined in terms of convergence to a given set of parameters on page 214, the concepts of growth and sustained growth appear cloudy. Growth appears to be analogous to any rate of increase in total income. With respect to sustained rate of growth, it is said on page 237 that "prior to 1914, income had grown for a long time with occasional interruptions"; while on page 335 it is said that "from 1897 to 1929 was a period in which the major depressions lasted only a little over a year each." Do we have sustained growth when major depressions occur?

The time range implied frequently appears confusing. For instance, on page 202 it is said that "over a relatively short period we may take the levels of the parameters to be fixed." But Duesenberry recognizes the quick changes which occur in the capital-stock–income ratio in the business cycle.

Fundamentally, Duesenberry explains growth by demand rather than by supply conditions. This leads to his comment on page 238 that "it is a remarkable coincidence that out of all conceivable savings functions, profits functions, and so on, the ones which came into existence in the nineteenth century were so well adapted to the rates of population growth, development of new industry, and other characteristics of that century."

ELMER C. BRATT

Lehigh University

Financial Intermediaries in the American Economy since 1900. By RAYMOND W. GOLDSMITH. Princeton: Princeton University Press, 1958. Pp. xxxv+415. $8.50.

This is a statistical study of financial intermediaries in the National Bureau of Economic Research tradition. The financial intermediaries covered are the banking system, personal trust departments, private and government insurance organizations, savings and loan associations, credit unions, sales and personal finance companies, land banks, investment companies, investment bankers, and government lending institutions. The period covered is 1900 to 1952 with frequent reference to subperiods ending in 1912, 1922, 1929, 1933, 1939, 1945, 1949, and 1952.

The statistics are arranged to show the growth of financial intermediaries as a whole, variations in rates of growth in different time periods, differences among

institutions in rates of growth, changes in number and density of financial intermediaries, changes in structure of assets and sources of funds, and changing importance of financial intermediaries in the economic picture as a whole.

The latter is accomplished by statistics (1) giving the share of financial intermediaries in financing non-financial corporations, unincorporated business enterprises, agriculture, non-farm households, state and local governments, and the federal government and (2) showing the share of financial intermediaries in personal saving, national assets, and national wealth.

Only a few of the book's conclusions can be mentioned in a brief review such as this. Financial intermediaries have increased their share of total and intangible assets since 1850. The banking system's share has declined, however, while that of other intermediaries—particularly insurance organizations—has correspondingly increased. Financial intermediaries have accounted for about 30 per cent of the combined external-internal financing of all other economic groups. The figure rises somewhat above one-half for external financing only. Financial intermediaries have supplied about one-fourth of the total financing and two-fifths of the external financing of non-financial corporations. Financial intermediaries have become increasingly important outlets for personal current saving, with most of the funds being supplied by non-farm households.

The author states that a full explanation of the facts and trends shown by his studies must wait the development of a general theory of financial intermediaries. He adds that this "is a task that cannot be handled as a mere accompaniment to this essentially descriptive study of financial institutions in the United States" (p. 15). He does, however, offer a list of the factors which such a theory "will probably identify as main determinants of the role of financial intermediaries" (p. 15). As a broad generalization, he believes that this role is determined primarily by "the ratio of the sum of money, insurance reserves, and (non-monetary) deposits in financial intermediaries to the sum of equities, long-term debt, and accounts payable of all other economic assets" (p. 16).

The study is an important one, for it supplies hitherto unavailable statistical data on an important aspect of finance. While the author stresses shortcomings of the data at various points throughout the study, he does not feel that they are serious enough to impair the usefulness of the results. Detailed tables are included in the appendixes, and additional tables which had to be omitted from the book are available in mimeographed form, at cost, as long as the supply lasts.

WALLACE P. MORS

Babson Institute of Business Administration

Modern Banking. By R. S. SAYERS. 4th ed. New York: Oxford University Press, 1958. Pp. xi+330. $3.40.

Since the first edition was published in 1938, *Modern Banking* has become a standard work on English banking, the London money market, and the relation of the Bank of England to the money market and the joint-stock banks. This latest edition brings the discussion of the factors mentioned above strictly up to date (the Preface to the fourth edition is dated April, 1957). Of the twelve chapters that comprise the text, the first nine are devoted largely to English banking. Chapter 10 deals with banking and credit policy in the United States

and compares the situation in this country with that of England, while chapters 11 and 12 deal with "Banking in New Countries" and "Outstanding Problems," respectively.

To the American teacher or student who would like to obtain a current description and analysis of English banking and money-market organization, the new edition of Professor Sayers' work can be highly recommended. The present reviewer has seldom been privileged to read such a lucid, compact, and authoritative treatment as that contained in the first nine chapters of this volume. It is unfortunate that a volume of equal excellence with an American slant is not available for use as a text for short courses in banking and credit in this country.

Chapter 10, dealing with banking and monetary policy in this country, is a marvel of concise exposition. Comprising some twenty pages, it presents an astonishly clear-cut picture of the subject. At one point only does Professor Sayers appear to have an erroneous impression. In this connection he states (p. 276): "If the Reserve System wishes to push things further . . . it will raise its own Discount Rates, in which case the whole structure of market rates will rise." Actually, Federal Reserve policy has been to adjust discount rates, upward or downward, to rate changes that have already taken place in the market rather than push rates by raising discount rates at the Reserve banks.

The discussion of banking, especially central banking, in new countries presents numerous points of interest and stresses the fact that central banking in countries which lack a short-money market or where the commercial banks are not highly developed must of necessity use different tools for control purposes than those resorted to in countries like England and the United States as well as some of the older European countries.

In the final chapter, on outstanding problems of the present and particularly the future, Professor Sayers states (p. 299) that he is resorting to speculations rather than description. He considers the future of commercial banking in England and various possible or probable future problems of central banking in an intelligent manner, and his speculations should certainly be of interest, whether the reader agrees with them or not.

FREDERICK A. BRADFORD

Lehigh University

Public Finance

Taxation in Australia. By WALTER W. BRUDNO *et al.* Boston: Little, Brown & Co., 1958. Pp xxix+326. $10.00.

This volume is one of a "World Tax Series" of thirty or more volumes contemplated by the Harvard Law School's International Program in Taxation. Works on Brazil, Mexico, and the United Kingdom have already been published. The Australian study is the joint work of the staff of the school and a research group in the Faculty of Law at the University of Sydney.

The "World Tax Series," according to an introductory statement, aims at two basic goals: a description of each tax system in its own legal and administrative terms and a presentation of each system so that it can be compared, point by point, with others. To facilitate this comparison, each topic in each book in the series is numbered, to provide a convenient and complete system of cross-ref-

erence. Consequently, this particular work, in its setting in the series, is designed especially as a reference guide presenting a comprehensive perspective of the Australian tax system. Periodic supplements will fill the purpose of keeping up to date the information in the basic volumes.

Taxation in Australia is in very little, if any, degree a work dealing with trouble spots in taxation with the implication and delineation of suggested reforms. Rather it essentially marshals the facts in orderly and complete fashion and presumes apparently that any desirable changes in the tax structure of a given country might come from a perusal of the law and its administration in other countries.

This work is described as an exposition of both statutory and case law on a functional basis. There is a general description of the tax system, with its historical and economic background, combined with a detailed analysis of the major taxes of the Commonwealth and a summary treatment of the important state taxes. Part I of the book presents the description of the tax system in four chapters entitled "Introduction to the Tax System," "Summary of Taxes on Income," "Summary of Taxes on Capital," and "Summary of Taxes on Transactions." Part II, "Analysis of the Income Tax," contains ten chapters which methodically and thoroughly explore the many and varied aspects of income taxation in the Commonwealth. There are chapters dealing with "Classes of Taxpayers," "Principles of Income Determination," "Business Income," "Income from Personal Services," "Income from Capital," "Income from Special Activities," "International Aspects of Income," "Computation of the Tax," "Administration and Procedure," and "Tax on Undistributed Income."

Illustrative of the emphasis upon outline portrayal are the synopses of the Commonwealth and state tax structures which appear in the introductory chapter of Part I. The description early in the book of the political, constitutional and economic structure of Australia is a helpful and refreshing counterbalance to the detailed treatment of tax law itself, especially the income tax, which is the predominant aspect of the book. Income tax return forms are included as a special feature.

A reader familiar with the American scene notes with interest the contrasts and similarities between American and Australian tax law and practice. He also observes the helpful Bibliography, the Table of Statutes, the Table of Cases, and the extensive 35 pages of Index. Taxation in Australia is a scholarly analysis, if not critical evaluation, of the Australian tax structure, valuable alike to the tax practitioner, government official, businessman, teacher, and student.

MARVEL STOCKWELL

University of California, Los Angeles

Public Principles of Public Debt: A Defense and Restatement. By JAMES M. BUCHANAN. Homewood, Ill.: Irwin, 1958. Pp. xi+223. $5.00.

The aim of this book is to revive the classical theory of public debt. The currently accepted views are said to contain errors which classical writers had already discovered and avoided. An analytical framework, based upon the classical model whose formulation is best represented in the works of H. C. Adams, C. F. Bastable, and P. Leroy-Beaulieu, is carefully developed in the first eleven chap-

ters. The three concluding chapters, devoted to normative economics, apply the theory to some major questions of debt policy. Suggested measures of the size of our national debt are given in an appendix.

The presentation of the theoretical model is organized around a refutation of "three basic propositions" of "the new orthodoxy of the public debt," namely: (1) the creation of public debt does not involve any transfer of the primary real burden to future generations; (2) the analogy between individual or private debt and public debt is fallacious in all essential respects; (3) there is a sharp and important distinction between an internal and an external public debt.

The first proposition is refuted on the grounds that the reduction in income suffered by the taxpayers cannot properly be offset against the gain in income of the bondholders (neglecting the effects of income redistribution). Since the bondholders could have lent to private borrowers instead and received interest income without concomitant tax payments, the primary real burden of a national debt derives from the forcible reduction in income of future taxpayers in order to service the debt.

The notion of a difference between the burden of private and national debt is also a consequence of methodological error, arising from the failure to pose the proper alternatives. As both lender and borrower voluntarily enter into a private debt transaction, both must gain from it. The borrower expects to benefit from use of the borrowed funds by an amount greater than its future cost. The case of government borrowing depends upon the same comparisons. If the return from the public expenditure financed by the loan exceeds the costs of servicing the loan, then there is a gain just as in the case of the private debt. Consequently, the two forms of debt are analogous in all major respects.

The false notion that internal and external debt have a different significance assumes that a notion has identical economic power whether its expenditures were financed by domestic or foreign borrowing. Since external borrowing necessitates no reduction in the resources used by private industry because of the government expenditure, there are more resources with which to repay the foreign debt, and its repayment entails no greater sacrifice than repayment of an equivalent internal debt.

In considering debt policy in a democracy, there is noted a dangerous tendency toward overborrowing, a tendency limited by classical ideas of public debt. The new orthodoxy lacks such restraints, and the author suggests a limiting process. Also, it is indicated that the strongest argument for public debt retirement at full employment is the stimulus to economic growth of added funds for private investment. The analysis of the effects of debt retirement upon economic stability in the final chapter includes the author's preference for "automatic" monetary controls as opposed to discretionary monetary policy.

Perhaps the most questionable portion of the analysis is the summary disposal of the argument that a sharp and important distinction exists between an internal and an external public debt. The refutation hinges upon the conceptual inadmissibility, as of a point in time, of contrasting the sacrifice required to repay an internal as opposed to an external public debt of the same magnitude. Such an assertion is hardly proof of equivalence. Direct money creation as a means of financing public expenditures under certain circumstances is an integral part of the policy recommendations. In view of the legal restrictions placed upon such action in this country, as well as the public furor which arose when the Federal Reserve announced in January, 1943, its intention to issue a small existing stock

of Federal Reserve Bank Notes, a question of feasibility arises. On the whole, there is relatively little to criticize in this study.

This monograph is a scholarly presentation and is not designed for the general reader. The comments above do not indicate the real contribution which it makes to the current theory of public debt. While it may not revolutionize economic thinking about our national debt, it is a highly provocative study that can be expected to lead to further developments in this area. In any case, it will enhance the level of accuracy and the degree of spohistication employed in future economic discussions of the debt. This book should be read by everyone seriously concerned with public debt policy.

VANCE Q. ALVIS

West Virginia University

Financing Government. By HAROLD M. GROVES. 5th ed. New York: Henry Holt, 1958. Pp. ix+630. $6.75.

This revised edition of Professor Groves's widely used and popular textbook will be welcomed by many teachers of public finance and others. Like the earlier editions, it reflects the fine scholarship, extensive knowledge of the subject, and rich background of the author. The completeness of its coverage and the balanced treatment of the subject render the book especially well adapted for an introductory undergraduate course. For purposes of general background, it can be read profitably by graduate students, and some parts of the book, such as the chapters on fiscal policy, can appropriately be given as assigned reading to advanced students of the subject. Most of the book can be read with understanding and rewarding results by persons without formal training in economics.

In this fifth edition the author has substantially rewritten the two chapters on fiscal policy, the two chapters on the public debt, the chapter on highway finance, and the chapter on the general aspects of public expenditure. Other chapters have been revised in the light of recent developments and current trends. Wherever practicable, and particularly in the discussions of public borrowing and fiscal policy, continued recognition has been given to macro-economic analysis.

Some of the rather formidable graphs in the chapter on application of fiscal policy in the preceding edition have been eliminated. The deleted graphs were not effective teaching aids for most beginning students. Extension and improvement of the discussion of the balanced budget and the unbalanced budget in this same chapter are worthy of special mention.

Although the author defends the order of the chapters, he admits that the arrangement is somewhat unorthodox. Sources of revenue are treated in advance of public expenditure. The chapter on shifting and incidence is placed between the property and income tax chapters, and the chapter on the legal foundations of taxation comes after, rather than before, the discussion of major tax revenues. The chapter on intergovernmental relations is separated by the two chapters on public expenditures from the chapter on state and federal aids. It is, of course, possible for an instructor to assign the chapters in a more conventional order, with little, if any, loss in continuity.

This book was originally designed for a two-semester course, but it can be used with excellent results in a one-semester course by omitting chapter 13 and

the Appendix and by requesting the students merely to read, rather than to study intensively, chapters 4, 5, 14, 15, 16, 17, and 18. The book is particularly well designed for a course in which the emphasis is upon basic principles and fundamental issues. The author is constantly alert to the social, economic, and political implications of the subjects under discussion. Statistics and factual details are limited to the amount necessary to provide the reader with an adequate background for the analysis of the topics presented.

Students and teachers of public finance are indebted to Professor Groves for the outstanding contribution that he has made in writing this book and in increasing its effectiveness in the current edition.

H. KENNETH ALLEN

University of Illinois

The Income-Tax Burden on Stockholders. By DANIEL M. HOLLAND. Princeton: Princeton University Press, 1958. Pp. xxv+241. $5.00.

This study, made under the auspices of the National Bureau of Economic Research, attempts to measure the degree of "double taxation" resulting from the combined corporation income and personal income taxes on stockholders of various income levels. The period covered is 1940 through 1952. The estimates are based on actual taxes paid and the proportion of income from dividends at different income levels, as reported in *Statistics of Income*. They also take into account the varying proportions of corporate income distributed and reinvested in different years.

The author's assumptions concerning the shifting of these taxes, the extent of tax evasion, and other factors are clearly stated and in some instances the effect of alternative assumptions is given for comparison. Thus, while the author argues that the most reasonable assumption is that the corporation tax falls largely on the stockholder, he includes estimates of the effect of these combined taxes on different income groups on the assumption that half the corporation tax is shifted to the consumer. He also measures the effect on tax yields of substitution for the two taxes of a personal income tax applying to the stockholders' pro rata share of corporate income whether distributed or not.

The major results of the study show that the corporate income tax increases the tax burden of stockholders, as compared with non-stockholders with similar income, at all levels of income when only distributed earnings are taken into account. However, the differential is greater for small-income receivers than for large. The study also demonstrates that when undistributed income is credited to the stockholder, the taxpayers in the higher brackets pay less than they would pay if there were no corporation income tax but all corporate income was subject to personal income taxes as in a partnership. The small-income receivers, on the contrary, pay more under the present method. Thus the effect is to decrease the progressivity of the personal income tax.

It is also shown that the degree of progressivity of the combined taxes, as compared with the personal income tax alone, is erratic. And estimates of the effects of the relief provisions of the Internal Revenue Code of 1954 show that the middle-income groups received less benefit, relatively, than either the low- or the high-income groups. In short, if it can be assumed that the degree of progressivity contemplated by the personal income tax rates is reasonable, the

effect of the combined taxes and the relief provisions is to reduce the equity of the tax burden considerably.

While most of these findings will come as no surprise to students of taxation, they do throw new light on the quantitative importance of alternative tax measures. The study also makes a real contribution to methods of measuring the tax burden.

MABEL NEWCOMER

Vassar College

A Tax Program for Small Business: How Should Small Corporations Be Taxed? By GEORGE E. LENT. Hanover, N.H.: Amos Tuck School of Business Administration, Dartmouth College, 1958. Pp. 28. Gratis (paper).

Professor George E. Lent is perhaps the best-qualified person we have to write of the federal taxation of small businesses. His previous writing, his experience in the Treasury, and his academic background combine to make him the ideal person. The quality and succulence of the analyses included in this little study are proof, if any were needed, of my opinion.

In less than 30 pages Professor Lent has presented the nub of all the important aspects of the general problem of the application of the federal corporation income tax to domestic business. In this regard the title is somewhat misleading in two ways: first, it does not indicate the study to be restricted to this aspect of business taxation, and, second, it does indicate that the study also considers, although largely incidentally, taxation of large businesses.

The conclusion of the study is that if eight changes, each of a relatively minor nature, were made, about all that could be accomplished to strengthen small businesses through taxation would be done.

In making these recommendations Professor Lent has in mind (1) the preservation of revenues, (2) that exemptions be aimed at accomplishing a worthwhile aim, and (3) that the tax liability of small businesses should be approximately the same whether organized as corporations or in some other manner.

It seems to have become an accepted tax principle that the general benefits commonly associated with incorporation should not become the justification for higher taxes. It was not always thus. The background out of which corporation taxation grew in the United States gave an important place to the justice of taxing the valuable general privileges of incorporation. Professor Lent in this study does not take the next logical step that has always seemed to me to be necessary when the general legal concept of the corporate franchise is eliminated as a tax base. Basically, this is to separate the corporate franchise into two types—those franchises extending general corporate privileges which are sufficient for a small business and those extending the greater rights required by larger businesses. I have had the feeling since 1942[1] that if this principle were adopted, it would resolve a number of the business tax problems belonging to the group discussed by Professor Lent. The acceptance of this conceptual framework would lead to federal incorporation and stricter regulation plus higher taxation of larger interstate corporations engaged in a number of types of activities and state incorporation and less rigid regulation and lower taxation of smaller and more localized business units that find general corporate privileges sufficient.

1. *The Corporate Franchise as a Basis of Taxation* (Austin: University of Texas Press, 1942), pp. 244–49.

The consideration of some of the relationships arising out of a different legal situation for large and small businesses is limited in this study to consideration of the partnership option considered in 1954 and the compulsory-partnership requirement of closely held corporations used in Great Britain and Australia. Here again, Professor Lent's extensive background permits him unerringly to select the crucial considerations and to dispose of them quickly.

This compact study of a very important fiscal problem will be of most use to persons who have had a general awareness of the considerations involved but who have permitted their thinking to become a bit fuzzy and have not remained current relative to factual studies and the most recent expert opinion.

R. W. LINDHOLM

University of Oregon

Classics in the Theory of Public Finance. Edited by RICHARD A. MUSGRAVE and ALAN T. PEACOCK. New York: Macmillan, 1958. Pp. xix+244. $6.00.

Sixteen selections are presented as a sample of European literature on the "optimum distribution of resources between the government and the private sector, and with the ideal means of taxing individuals so that resources could be put at the disposal of the state." The fifteen authors are Wagner, Panataleoni, Stein, Mazzola, Stuart, Wicksell, Edgeworth, Montemartini, Leroy-Beaulieu, Barone, Lindahl, Sax, Wieser, Goldscheid, and Ritschl. The editors have prepared a ten-page Introduction which describes the setting of the general debate and notes some of the major issues discussed.

Most of the essays seem to me somewhat difficult. While I am not competent to judge the quality of the translations, they seem clear. I feel confident that the originals themselves would be slow reading—but rewarding. Many ideas are anything but simple; and some that are easily understood represent oversimplifications which may make the reader a bit impatient until he recalls the setting and contemplates honestly some of the oversimplifications we still employ. Length varies greatly. The longest is a very impressive analysis, Wicksell's "A New Principle of Just Taxation," dating from 1896 and in some respects more modern than much one sees today.

The topics include different aspects of ability-to-pay theory and general problems of progression, benefit principles of taxation, the role of the state, the interrelation of government expenditure and taxation, collective and private wants, social motivation as related to private wants, and the application of price theory and marginalism to public spending and revenue. The concern is with the "micro" aspects of public finance, aspects of economics which are of no small importance today. The emphasis on government spending distinguishes many of the selections from much of the Anglo-Saxon literature on public finance, with its preoccupation with taxation.

Those who have made this volume available, including the sponsoring agency, the International Economic Association, have done a very useful service. Most of us, unable or unwilling to read materials in the different languages in which these essays were written, have missed a great deal. My own grasp of public finance—and economics more generally—could have been advanced by a good fraction of a professional lifetime if this volume had been ready when I was a graduate student. Ideas and insights which have been appearing in our literature

since the war are much less new than some of us may like to think. This careful selection of classical discussions is of much more than historical interest. It will help sharpen our reading and understanding of our own problems—of economic theory or of financing the local school. Important problems of political economy are often old, and the thinking of scholars of other lands and earlier times will have a relevance today which we now have less excuse to ignore.

There is an index of names. I venture one suggestion for future editors: supply at least brief biographical notes.

C. Lowell Harriss

Columbia University

BOOKS RECEIVED

AMOS TUCK SCHOOL OF BUSINESS ADMINISTRATION. *A Reading List on Business Administration.* 7th ed. Hanover, N.H.: Dartmouth College, 1958. Pp. viii+68. $2.00 (paper).

This valuable reference booklet lists and briefly describes 733 books, periodicals, and other sources of information in 59 subdivisions of 12 areas of business administration.

BANFIELD, EDWARD, and GRODZINS, MORTON. *Government and Housing in Meropolitan Areas.* New York: McGraw-Hill, 1958. Pp. xxi+177. $6.50.

The authors analyze why so little has come out of so many schemes of metropolitan reorganization and show how politics is a greater impediment than economic considerations to improved housing on a large scale under government auspices.

BOULDING, KENNETH E. *Principles of Economic Policy.* Englewood Cliffs, N.J.: Prentice-Hall, 1958. Pp. viii+440. $5.95.

After discussing progress, stability, justice, and freedom as basic objectives, the author considers the extent to which these objectives may be satisfied in a number of different fields of policy.

CAGAN, PHILLIP. *The Demand for Currency Relative to Total Money Supply.* New York: National Bureau of Economic Research, 1958. Pp. iv+33. $0.75 (paper).

In peacetime periods the expected net rate of interest paid on deposits and expected real income per capita have been major determinants of the demand for currency relative to deposits.

COLM, GERHARD, and GEIGER, THEODORE, with the assistance of MANUEL HELZNER. *The Economy of the American People: Progress, Problems, Prospects.* Washington, D.C.: National Planning Association, 1958, Pp. viii+167. $2.00 (paper).

The first eight chapters of this little book describe the factors contributing to high productivity and living standards in the American economy. The remaining five chapters discuss balance in economic growth and other problems and prospects for the future.

CONFERENCE ON RESEARCH IN INCOME AND WEALTH. *An Appraisal of the 1950 Census Income Data.* Princeton: Princeton University Press, 1958. Pp. x+450. $10.00.

Part I of this volume contains statistics on income size distribution, including material from the 1950 Census not available elsewhere. Part II analyzes the Census data in the light of information from other sources—field surveys and personal income tax and social security statistics. Part III is concerned with various uses of Census income data.

CREDIT RESEARCH FOUNDATION (ed.). *Credit Management Handbook.* Homewood, Ill.: Irwin, 1958. Pp. xxiii+776. $10.00.

The materials in the twenty-nine chapters of this new reference work represent the contributions of more than one hundred experienced credit executives and faculty members of leading universities.

DARTMOUTH ECONOMIC RESEARCH COUNCIL. *Financing Corporate Growth through Investment Institutions.* Hanover, N.H.: Dartmouth College, Amos Tuck School of Business Administration, 1958. Pp. 27. $1.00 (paper).

This booklet traces the growth of financial intermediaries since 1920, indicates how their investment patterns have changed and shows some of the ways in which they may influence corporate policy in finance and other areas.

ENGLAND, WILBUR B. *Operating Results of Food Chains in 1957.* Boston: Harvard Business School, 1958. Pp. vi+31. $2.00 (paper).

The data in this study, which is based on reports from companies representing more than 40 per cent of the food-chain business in the United States, reveal some of the current critical problems which are developing in this type of distribution.

HABERLER, GOTTFRIED. *Prosperity and Depression: A Theoretical Analysis of Cyclical Movements.* New rev. ed. Cambridge: Harvard University Press, 1958. Pp. xviii+520. $6.00.

This classic of business-cycle literature has been revised and enlarged in this new fourth edition. While no changes have been made in Parts I and II, the material formerly making up Part III has been replaced by three papers sketching and evaluating recent developments in business-cycle theory.

HARROD, ROY F. *The Pound Sterling, 1951–1958.* Princeton: Princeton University Press, 1958. Pp. 49 (paper).

The author concludes that if Britain attempts to add to her reserves at a greater rate than about £ 50 million a year, "she will inevitably exacerbate the exchange difficulties of other countries and be likely, therefore, to increase the momentum of world recession."

HEFLEBOWER, RICHARD B., and STOCKING, GEORGE W. (eds.). *Readings in Industrial Organization and Public Policy.* Homewood, Ill.: Irwin, 1958. Pp. xi+426. $6.00.

This eighth volume in the American Economic Association's "Series of Republished Articles on Economics" compiles the more important articles in the field of industrial organization and public policy that have appeared since the volume on *Readings in the Social Control of Industry* was published in 1942.

HERSUM, ANITA C. *Operating Results of Variety Chains in 1957.* Boston: Harvard Business School, 1958. Pp. vi+37. $2.00 (paper).

In this twenty-seventh annual survey by the Harvard Bureau of Business Research of variety-store chains, a beginning is made on comparisons of store operating expense between self-service and conventional stores.

MOORE, GEOFFREY H. *Measuring Recessions.* New York: National Bureau of Economic Research, 1958. Pp. 57. $1.00 (paper).

The purpose of this report, reprinted from the June, 1958, issue of the *Journal of the American Statistical Association,* is to provide a set of measurements of past business-cycle recessions with which current and future recessions can be compared.

ROBERTS, B. C. *National Wages Policy in War and Peace.* London: George Allen & Unwin, 1958; distributed by Macmillan, New York. Pp. 180. $3.50.

The author of this informative study surveys wage policies in a half-dozen countries and concludes that a centrally administered national wages policy cannot be relied upon to prevent inflation.

SOLDOFSKY, R. M. *Lectures in Financial Management.* Iowa City, Iowa: Iowa Supply Co., 1958. Pp. 118. $2.50 (paper).

These fifteen lectures are concerned primarily with the raising of funds and managing the firm's cash position.

UNITED NATIONS DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS. *World Economic Survey 1957.* New York: United Nations, 1958; distributed by Columbia University Press, New York. Pp. xv+227. $2.50 (paper).

The first part (136 pages) of this tenth annual review of world economic conditions examines the problem of inflation in the 1950's. The second part continues the study of current economic developments treated in previous issues.

VAN CISE, JERROLD G. *Understanding the Antitrust Laws.* New York: Practising Law Institute, 1958. Pp. 174. $2.50 (paper).

Sections on "The Department of Justice and the Antitrust Laws" by V. R. Hansen and "The Federal Trade Commission and the Antitrust Laws" by J. W. Gwynne are included in this revision of Mr. Van Cise's monograph.

WASSERMAN, PAUL, with SILANDER, FRED S. *Decision-Making: An Annotated Bibliography.* Ithaca, N.Y.: Cornell University Graduate School of Business and Public Administration, 1958. Pp. vi+111 (paper).

The titles of the books and articles selected for listing in this bibliography are grouped under eight broad topical headings. The descriptions are brief and clear.

CLYDE WILLIAM PHELPS

University of Southern California

COAST FEDERAL SAVINGS

(Financial Statement)

December 31, 1958

ASSETS

Cash and Government Securities	$ 93,262,016.15
G.I. Government Guaranteed and FHA Loans	29,628,212.50
Coast Federal Home Loans	186,767,640.70
Ownership in Federal Home Loan Bank	4,034,500.00
Other Assets	2,433,242.98
TOTAL ASSETS	$316,125,612.33

LIABILITIES AND RESERVES

Savings Accounts	$271,503,223.40
Advances from Federal Home Loan Bank and Other Sources	13,022,608.67
Loans in Process and Other Liabilities	2,650,147.79
SUB-TOTAL	287,175,979.86
Reserves and Surpluses	28,949,632.47
TOTAL LIABILITIES AND RESERVES	$316,125,612.33

MAIN OFFICE

9TH & HILL, LOS ANGELES, CALIFORNIA

OTHER CALIFORNIA OFFICES

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237 EAST FIRST ST., LONG BEACH
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COAST FEDERAL SAVINGS

JOY CRAIG, PRES.